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Delivered at the University of London on Feb. 13th and 20th, 1900.

BY JOHN ROSE BRADFORD, M.D., D.Sc., F.R.C.P. LOND., F.R.S.,

PROFESSOR SUPERINTENDENT OF THE BROWN INSTITUTION; PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL, ETC.

LECTURE I.

Delivered on Feb. 13th.

GENTLEMEN,—The work of the Brown Institution at the present time is divisible into three main classes. First, there is the hospital side of the institution, under the charge of the veterinary officers, thanks to whom a large number of animals are seen daily and treated either as in-patients or out-patients. Secondly, there is the routine investigation of cases of suspected rabies which takes place in the laboratory of the institution and which has taken place there for the last five years. Previously to that period such cases were only sent there irregularly. Thirdly, there is the research work bearing on the diseases of animals and of man which is conducted in the laboratory either by the professor or by other workers.

In the five lectures which I propose to give in accordance with the provisions of the will of the founder it is my intention to deal in the first two with certain questions in relation to rabies, and in the last three with certain research work on the tsetse fly disease of South Africa. During the last five years a large number of cases of suspected rabies have been investigated—between 300 and 400—and a very considerable amount of information and material has been accumulated in that way. Most of this material is of very little use for the purposes of research, owing to a variety of circumstances which I need not go into, but as affording statistical material on the incidence and on the diagnosis of rabies the material is of considerable value. During the first three of the last five years all the cases of suspected rabies in this country were sent to the Brown Institution, but latterly the Board of Agriculture have undertaken the examination of cases of suspected rabies in their own laboratory, just in the same way as they investigate cases of other suspected diseases in animals, and so for the last 18 months the Brown Institution only has received the suspected cases in the area that is governed by the London County Council, and therefore the number has very considerably fallen off. I propose to discuss at some little length the question of the diagnosis of rabies, both in man and in animals. The term "rabies" is more suitable for the disease both in man and in animals than the term "hydrophobia," the latter term being to a very great extent, if not entirely, a misnomer. Before going into detail with reference to the more immediate subject of our lectures I will mention one or two general points in connexion with rabies, beginning with certain historical matters.

Rabies is a very remarkable disease and affords one of the most interesting examples of the progress of scientific investigation and of the way in which scientific investigation of a disease in a laboratory in a comparatively few years has thrown a flood of light on the nature of the disease under consideration. There are very few, if any, maladies which resemble it at all closely—tetanus perhaps resembling it more than any other; but rabies is, as you will see, a disease that is really very remarkable, more especially as regards its pathology.

We find that rabies is mentioned in quite early times—i.e., by Aristotle. It was not, I believe, mentioned by Hippocrates, but a very fairly accurate description of it is given by Celsus. Subsequently to that time, in the Middle Ages, there is very little mention made of rabies, and it is not until we come to the latter end of the last century that we find any accurate description of the disease. There is a certain amount of interest in the fact that it was very fully described by a very celebrated English physician—viz., Dr. Mead—in the year 1767; but from the time of Celsus to the time of Dr. Mead there is, I believe, very little mention in literature of rabies. Van Swieten in 1771 gave a very good description of the disease and this is of special interest in connexion with some of the controversies that have occurred in the last ten years, more especially with reference to the work of Pasteur. It is of interest to remember that Van Swieten recognised that there were two forms of the disease—a furious form and a paralytic form. So that more than 100 years ago the paralytic form of rabies was recognised and described. Of course, it was not then described as fully as we know it now, but it was definitely recognised, and that is a point of very great interest when we remember that a few years ago—I think in 1885—when a well-known case of paralytic rabies occurred in the human subject it was asserted by many persons, well-intentioned, no doubt, that it was a new disease which had been produced by Pasteur's methods, and that it was not a disease that was known to the older writers. Morgagni, the celebrated Italian observer, described rabies, and he fell into an error—an error which persisted until quite recent times and which persists still to a certain extent in the public mind. He fell into the error of believing that the disease was not, so to say, a specific disease, and he taught that it could be not only communicated by the bite of rabid animals but that it could also be communicated by the bite of animals which were not rabid but which were furious or enraged in the ordinary sense of the word and which were not suffering from the malady of hydrophobia or rabies. From the time of Morgagni onwards there is no observer whose work on the subject need detain us until the year 1811. Then a French observer, Gohier, made a considerable number of observations on rabies, and he was one of the earliest, if not the earliest, to experiment on rabies in the laboratory. Many of his observations have stood the test of time, but one of his facts—or rather one of his supposed facts—I think has not stood that test. He thought that the carcass of the animal was highly infective and that the disease was spread in that manner. Subsequently to 1811 we come to Grüner who in 1813 made important observations and I believe he was the first to determine the fact that the saliva was infective. That, perhaps, is the most important observation that was made from the time of Van Swieten. Van Swieten's observations, recognising that the disease existed in two forms, was a very important one, and Grüner's observation that the saliva was infective was similarly a most important one. The next observer who worked extensively at the subject was Berndt, whose work was published in 1822, and who confirmed the observations of others and who corroborated the original observations of Van Swieten that the disease existed in two forms—a furious form and a tranquil form. I believe he was the first to use those terms, the tranquil form now being usually spoken of as "dumb rabies." That brings us to the year 1822. The next most important observation was that of Galtier in 1871, who described the disease in rabbits. Inasmuch as the disease in rabbits is totally different in its main symptoms to that in dogs, the recognition of it in the rabbit and the description of the typical symptoms in that animal was a very distinct advance. In recent times the most important observations up to the time of Pasteur were those of Nocard and Paul Bert in 1880. These observers showed that if the saliva was filtered through plaster the virus remained on the plaster; in other words, they showed that the poison of rabies—the exact nature of which we do not know even at the present time—was a particulate virus.

Then we come to the work of Pasteur. In five years—and that was about the time that Pasteur's work on rabies extended over—in speaking of Pasteur I, of course, mean the work of Pasteur and his pupils—the additions to our knowledge of rabies were far greater than those of all other observers put together. That affords an illustration of what I said a few minutes ago, that rabies is perhaps the most striking instance of a few years' experimental work in the laboratory adding more to our knowledge than, I was going to say, centuries of accurate and careful observation. Pasteur's most striking and important discoveries in connexion with rabies may be said to be four in number. He demonstrated first of all that the virus was not only in the saliva but that it was also in the nervous system. That was the first fact which Pasteur and his pupils showed, and they proved that not only was the virus present in the central nervous system but that it was present also in the peripheral nervous system. It had been suggested—I

do not know when, but some considerable time ago—that this was so in the case of tetanus, and long before the bacterial origin of tetanus was known it was surmised that the poison of tetanus travelled by the nerves. In the older surgical writings observations are recorded with reference to the part played by the irritation of small nerves in wounds as a cause of tetanus. It is in rabies, and as a result of Pasteur's work, that we have our best instance of the poison of a fatal disease producing its effects by acting on the nervous system, and not only producing its effects by this means, but apparently reaching the central nervous system by travelling along the peripheral nervous system. The foundation for that view of the pathology of rabies was laid by Pasteur's discovery that the poison was found in the central nervous system and also in the peripheral nervous system.

Pasteur's second discovery was the ease with which the disease could be directly inoculated provided that it was inoculated in the nervous system. A great many observers had previously tried to inoculate rabies. Some had succeeded and some had failed, and the fact that they used the subcutaneous method of inoculation or the method of simply rubbing the virus on a raw surface in the skin is the probable explanation of the very great difference in the recorded facts. Some observers had even gone so far as to say that the saliva was not infective; others found that the saliva was infective; others found certain organs to be infective and not other organs. There were great discrepancies largely dependent on the fact that the method of inoculation, as we shall see later, was not quite a satisfactory one. Pasteur added very greatly to our knowledge by showing that the inoculation into the nervous system was the best way of communicating rabies for experimental purposes from one animal to another; and the method which Pasteur invented and elaborated with reference to rabies has, of course since his time, been used, not only with so much success in the case of rabies but with certain success in the study of the pathology of other diseases. Both those facts Pasteur observed in 1881. Thirdly, in 1884 he made his first attempts, or at any rate he got his first results in his attempts, at attenuating the virus. He proceeded first of all on the lines he had pursued in studying similar problems in other diseases—viz., by seeing the effects of inoculating a series of animals of different species. After trying a large number of animals Pasteur found that if a succession of monkeys were inoculated the virus became attenuated, and finally, after passing through a considerable number of monkeys, that the poison did not produce such marked effects on dogs as it had originally produced. Conversely he found that by passing the virus through a series of rabbits it was increased in potency. But he very soon came to the conclusion that he could not hope to get curative effects or to elaborate any means of treating the disease by the results obtained in monkeys. Lastly, in 1885, he elaborated the very remarkable method which goes by his name for treating the malady, or more especially for preventing the malady in animals and in man. I do not propose to discuss that at any length; but you will remember that it consists in getting a virus of a certain fixed strength which he called "*le virus fixe*," and this he obtained by passing the disease through a succession of rabbits—I think about 100—until the period of duration of the disease and the period of incubation of the disease are both absolutely fixed. It is well known that if you take the sporadic cases of rabies which occur in the streets sometimes the virus from one dog will produce a malady with a short incubation period, and the disease will run a rapid course, while in another case it will have a long incubation period and may run a very much slower course. Pasteur thought that it was essential to work with a virus of constant strength and he obtained this virus of constant strength by passing it through a succession of rabbits. Having done that he found that the virus was attenuated by drying, so that if the spinal cord of the rabbit be removed and dried he found that in the course of a fortnight the virus had completely lost its strength. Those who have seen Pasteur's Institute may remember the darkened room which is kept at an equable temperature, in which the spinal cords of these rabbits are dried. Therefore, by preparing separate extracts of these spinal cords every day extending over a period of a fortnight a virus of different degrees of potency could be obtained and that forms the basis of his method of treating the disease, which method I do not propose to discuss now.

Since 1885 our knowledge of the nature of rabies has not really greatly progressed. A number of observers have recorded that they have isolated an organism in cases of rabies, but at the present time there is no consensus of opinion amongst bacteriologists with reference to this question. I think it cannot be said that the identity of the organisms of rabies has been clearly established, although, of course, there are many strong arguments in favour of the disease being of microbic origin, quite apart from the observation of Nocard and Paul Bert which I have mentioned, that filtration of the saliva through plaster removed the virus.

That is a very short historical sketch of the progress of a portion of our knowledge with reference to the nature of rabies. There is one other point which one would like to go into before dealing with the immediate question of diagnosis, because one cannot really discuss the diagnosis without first discussing this. I refer to the question of the animals that are liable to be affected by the disease.

Rabies, as you know, is a disease which is common to man and to animals, but all animals are not affected with equal ease nor does the disease run the same course in all animals. It affects all the mammalia and it also affects birds, but it is very doubtful whether it affects the amphibia. It is said by one observer to do so, but others have been unable to confirm his observations. So we may say that the disease is limited to the mammalia and to birds. As a matter of fact, in the case of birds it is mainly seen as the result of experimentation. It is very difficult, as would occur to anyone, for a bird to be inoculated from a bite for obvious reasons; amongst other reasons is the fact that the feathers would probably remove the virus, so that the question of the disease affecting birds is not one of any great practical importance, although there is a considerable degree of theoretical interest about it, because birds are more refractory to rabies than are mammals. In mammals, as you know, the carnivora are those which are especially affected, and you know also that it is a disease which affects not only domestic animals but also wild animals. Some of the most serious outbreaks of rabies, both in animals and in the human subject, have occurred owing to its prevalence in wild animals. As regards wild animals, those of most importance from our point of view are wolves and foxes. Wolves, of course, have been a frequent source of rabies, both in France and in Russia, more especially in Russia, and it is not uncommon, I think, for outbreaks of the disease in this country to be associated with its prevalence in foxes. As regards other animals, the disease is not uncommon in cattle and it is more common in horned cattle. It is more common in cattle than in goats. It is not very rare in horses, but it is much rarer in horses than in cattle. It is exceedingly rare in pigs. A suggested and a probable explanation of this fact is that there is a very large amount of subcutaneous fatty tissue in the pig, and, as we shall see later, subcutaneous fat is not at all suitable for the inoculation of rabies. Therefore, the disease is common in dogs and cats, not uncommon in wolves and foxes, but in other animals it is rare—most rare in the pig, less rare in the horse, and least rare in cattle.

Another interesting point in reference to rabies is that, like many other diseases, perhaps nearly all diseases, it exists in certain localities and is very difficult to eradicate from those localities. Then at intervals of longer or shorter duration there are epidemics of rabies. In this country, for instance, Lancashire has long had an evil repute as a district where rabies is more or less endemic, and the same is true of Ireland and of certain districts in Germany and France. As regards epidemics, there was a very severe epidemic indeed in France and in Germany, and, in fact, in the whole of the western side of Europe, in the years from 1720 to 1723. In this country the best known epidemics of rabies—of course, I am speaking of rabies in animals—were from 1754 to 1762. There was a very severe epidemic in Lancashire in 1864. Then, more recently, there was what I think I may call a severe epidemic in the year 1894–96, and in 1895 and 1896 there was a very considerable amount of rabies in London. In 1897 there was not so much, in 1898 still less, and this last year I think I am correct in saying that there were no cases of rabies, anyhow none came under my observation. There have been epidemics amongst dogs and cats, but in addition to that in this country there have been severe epidemics amongst deer. The most interesting and extensive epidemics amongst deer have been these. In 1795 there was an attack of rabies amongst the deer in the Royal parks, then there was a severe epidemic in 1872 in herds

of deer belonging to the Duke of Westminster, and it will be within the recollection of most of you that there was a very severe epidemic in 1886 among the deer in Richmond Park, where amongst 1200 animals 264 were affected with rabies. Those are the principal epidemics of the disease which have occurred in this country in recent times.

There are certain countries in which rabies is unknown, and amongst these countries are Australia and Norway. There are other countries where outbreaks of rabies have occurred as the result of the importation of dogs, and, it is said, more especially of sporting dogs. There is an impression that is very current that rabies is a malady which is especially apt to occur amongst uncared-for dogs, whereas that is not at all the true state of affairs. Rabies is a disease which may occur in any dog, and we are always struck with the considerable number of cases in what are commonly called sporting dogs which are sent to us for diagnosis. There are three epidemics which have been laid to the charge of sporting dogs taken from this country. One of these was in the Mauritius in 1813, one was in Malta in 1847, and one was at Shanghai in 1867.

How is the malady communicated? In the great bulk of cases it is communicated by bites, and that is one of the very reasons why the prevalence of it amongst the carnivora is so important for us to recognise. When it is communicated by a bite you know that, on the whole, the cat is the more dangerous animal, owing to the fact that the cat is liable to "fly," as it is said, to the more exposed part of the body—the face, for instance—and also, perhaps, owing to the fact that it is well known that bites in the face, for reasons we will consider later, are more dangerous than bites in other parts of the body. Rabies, perhaps, can also be communicated by licking—that is to say, by licking a raw surface on the body. But it must be always remembered that the virus of rabies is not one that is very easily inoculated, and that it is much more difficult in the laboratory to communicate rabies by smearing a raw surface with the saliva than it is by injecting it hypodermically. It is more difficult to communicate it hypodermically than by injection into the muscles, and it is more difficult to communicate it by injecting it into the muscles than by injecting it into the eye. Further, it is more difficult to communicate it by injection into the eye than by introducing it subdurally. So that I do not know that it can be said that it has been accurately proved that it can be communicated by licking, but at any rate it is probable. It is said that when people are bitten by a rabid animal from 10 to 20 per cent. of the sufferers succumb to rabies. That is a matter on which it is most difficult to get statistics. Anyone who has had occasion to look the matter up will find very varying statements with reference to this point. Apparently, however, the balance of evidence is in favour of that view. A French observer, Leblanc, who collected a great number of accurate statistics—accurate, that is, as far as one can see—stated that the percentage was about 16. There is a very celebrated case quoted by Hunter where one mad dog bit 21 people and only one person succumbed from the disease. That has been sometimes quoted as showing that the mortality of the disease is only 5 per cent., but of course that is erroneous. The disease can also be communicated by infection at post-mortem examinations; and there have been instances of that amongst veterinarians. I am not aware of any recorded instance of such infection by the human subject—I mean of a human being having been infected by doing a post-mortem examination on a case of rabies in man—but there are cases on record in which it has occurred to veterinary surgeons. The third way in which it is said to be communicated is by the ingestion by animals of the flesh of other animals which have died from the disease. Here, again, there has been great controversy, many observers having failed to communicate the disease in that way and others having succeeded. Of course, an obvious explanation occurs—viz., that the question as to whether an animal contracts rabies or not by eating the flesh of an animal dying from rabies is whether there is any lesion in the throat or alimentary canal or not. Fourthly, it has been shown that it can be communicated by the milk of a suckling animal or of a suckling human being. There is a case recorded in the West Indies where an infant was suckled by its mother who was suffering from the early stages of rabies and the child contracted the disease and died from it before the mother. It has been proved in the laboratory that the milk of suckling animals, and human milk in cases of rabies in woman, is infective. Still, that is a point of only scientific interest.

Lastly, it has been shown in the laboratory that it can be communicated through the mucous membranes. The French observer, Galtier, has shown that if the virus of rabies be put into the conjunctival sac or into the interior of the nose a certain proportion of the animals so treated will succumb to rabies. These are really only matters of scientific interest. For all practical purposes the disease is communicated by biting, and you know that the danger of a bite depends very largely upon the part of the body upon which it is situated, quite apart from the question of clothes. Of course, it is obvious that bites in the legs and in the feet are less dangerous than bites in the hand or face, owing to the probability of the saliva being wiped off by the clothes or the boots. But, apart from that, there is, apparently, evidence that the inoculation of the virus into the face, for instance, is more liable to be followed by a rapid onset of the disease than if it is inoculated in the legs. The well-known experiment of Roux in which an animal was taken, the spinal cord was divided, and then the virus of rabies was inoculated into the hinder portion of the animal, throws some light on this question. Under those circumstances it can be shown that the lower segment of the spinal cord, separated from the central nervous system, will contain the virus in great quantity and in a high degree of virulence at the time when the upper segment does not contain it. And so it has been thought that the proximity of a part to the central nervous system does play a part and is a point of importance both in the progress and in the rate of onset of the malady. So that a wound of the face, inasmuch as it is near the central nervous system, is for that reason more dangerous. There are one or two other general points which I may mention.

First of all, let me say a few words with reference to the virus. I have already said—perhaps more than once—that rabies is a remarkable disease; but there is nothing, perhaps, in which it is more remarkable than in the nature and in the situation of the virus. We have seen that the virus is present in the saliva. We have also seen that it is present in the central nervous system and in the peripheral nervous system, but that it is not present in the blood. All observers are agreed that the blood of animals suffering from rabies is not infective. It is apparently not present in the bulk of the tissues and organs of the animal. It is not present in the muscles. It is not present in the liver or the spleen. It is present in the glands, such as the salivary glands, the pancreas, the lacrymal gland, the suprarenals, and the mammary gland; and it has always seemed to me, since I have been working at the subject, that that is one of the most striking phenomena in pathology—that this potent virus should be present in the central nervous system and in the secreting glands but should be absent from the blood and from the tissues such as those of the liver and the spleen. It is present, as I mentioned a minute ago, in the milk of suckling women; it is not present in the urine. It is said to be present in the seminal fluid, but in this there have been discrepancies among different observers. However, there have been no discrepancies as regards the saliva and those glands I have mentioned nor as regards the milk. Then, as I mentioned a few minutes ago, the virus is slowly destroyed by being dried in the air; and it takes about a fortnight for it to lose its virulence under those circumstances. When exposed to the air and to sunlight it loses its virulence in about 14 hours. In water it will maintain its virulence for as long as 40 days—for from 20 to 40 days—and in glycerine (which is a point of some importance with reference to the technique of inoculation) it will maintain its virulence for as long as a month. Then an important point where one has to investigate suspected cases of rabies is the influence of putrefaction on it. It has been found by French observers that the virus remains potent in the carcass of a dog which has been buried for 44 days; it has been found potent in that of a rabbit 27 days after burial and in that of a sheep 21 days after. So we have periods ranging from three to six weeks. My own experience does not quite agree with this. I know that I have failed twice to detect the presence of rabies in an animal which undoubtedly died from the disease where the carcass of the dog had been buried only a few days and had then been exhumed and sent to me. In one of those cases—a case in which a man had been bitten by the dog in the ear and had died from hydrophobia, so that one had very clear

evidence quite apart from the suggested diagnosis of rabies from the symptoms in the dog the inoculations from that dog were quite ineffective. That was probably owing to the presence of putrefaction. It occurred in the hot summer months. But the French observers—and that is the only discrepancy between their results and such results as I have obtained—have always laid stress on the point that ordinary putrefaction does not prevent the recognition of the presence of rabies in a buried carcass. Of course, you may often fail to detect the presence of rabies in suspected cases if there happen to be other organisms present, especially organisms capable of causing septicæmia, owing to the obvious fact that septicæmia runs a more acute course than rabies, and so perhaps both diseases may be communicated, but the animal dies from septicæmia before the symptoms of rabies have become manifest.

The only other point I wish to mention before discussing the diagnosis in full is the question of incubation. The diagnosis very often turns on incubation. The incubation period of rabies is known to vary greatly in different animals. I have prepared here a list of the more important. Most observers are agreed now that in man the incubation period of rabies lies between 20 days as a minimum and 60 days as a maximum and that it is rare after three months and very rare, if not unknown, after six months. One is perfectly aware of cases that have been mentioned in which the disease is said to have occurred after as long a period as 18 months, but I believe that the modern work on the subject has rather tended to the belief that there must be some error in those cases. But it is the minimum period which is of importance, because, as we shall see later, one of the important points in the diagnosis in the human subject is to distinguish rabies from a functional disturbance simulating rabies, which has been called by some observers "lyssophobia," and one of the points on which great stress is laid is the incubation period. It is of some importance to recognise that the disease in the human subject does not occur at a less period than 20 days after the bite. In a dog the incubation period is from 15 to 60 days and at least half the cases in the dog occur in less than a month after the bite or after exposure to contact with an animal suffering from rabies. In other animals the incubation period, from the point of view of practical medicine, is not of very great importance. In cattle it varies from one to three months; in sheep from 15 to 30 days; and in the horse from 15 to 60 days. Therefore, if you eliminate cattle, you may say that the incubation period in most animals varies from 15 to 60 days.

Now to come to what I propose to deal with in detail in my next lecture—diagnosis—I will only say now that the diagnosis of rabies can be considered from three points of view. You have, firstly, the clinical diagnosis, which is on the whole the most important, but it is not always the diagnosis which one can make, though it is the one which it is most desirable to make, especially in the case of an animal, owing to the loss of time that must necessarily occur if the diagnosis be made by any other method. Secondly, there is the diagnosis by post-mortem examination. Thirdly, there is the diagnosis to be made by experimental means. Now it is a very obvious thing, but it is sometimes forgotten, that the clinical diagnosis, especially in animals, is most readily arrived at by the question of the period of survival after the onset of the symptoms. This is a matter which I have mentioned here before and I will do so again. If a dog which is suspected of rabies bites an individual, that individual is, of course, most anxious to know whether the dog has or has not got rabies. It is a matter of the most vital importance to him—a matter of life and death. If that dog be killed, as is probably the case in 99 cases out of 100, then an interval of three weeks at least must elapse before it can be stated positively whether the dog had or had not had rabies. On the other hand, if the suspected dog be isolated the question can probably be answered with certainty in from two to four days, so that the clinical diagnosis of rabies, the diagnosis in the living animal, is a matter of very great importance. The tendency nowadays is rather to rely on the experimental method. I should be the last to decry the value of that method, and it may be the only means by which you can say that the dog has or has not got rabies, but in many cases very valuable time is lost by killing the animal and investigating it experimentally. I think you will at once see how, if the animal be killed, it may be impossible to diagnose the disease in a shorter period than three weeks. It is for this reason—that the post-mortem signs of rabies, both in the human subject and in animals, are not very marked. They are at the best rather equivocal signs, especially in animals, and, further, the most characteristic post-mortem signs of rabies in the dog are not developed until the malady has been allowed to run its full course. If the animal be killed on the very first day after it has become strange in its behaviour the post-mortem examination may be absolutely negative; it may show that the dog is apparently perfectly well. That is clearly a very serious fallacy. Therefore, the clinical diagnosis of the disease is a matter of the greatest importance. The difficulty of clinically diagnosing the disease in the dog lies first of all in the difficulty owing to the symptoms, as rabies resembles other diseases in the dog, and, secondly, there is great danger in keeping a mad dog alive. If, however, the dog can be isolated so that it cannot do any harm it would be wiser to do that than to kill it, even if it has bitten anyone, because under those circumstances, in two or three days, perhaps less, you will have very strong presumptive evidence of the existence of rabies, simply by the death of the animal with the characteristic symptoms of that disease.

In my next lecture I will consider the details of the diagnosis, both clinically and by post-mortem examination, as well as the diagnosis by the experimental method, and I will more especially deal with the fallacies that are liable to occur in the experimental method.

The Arris and Gale Lectures

ON

THE ANATOMY AND PATHOLOGY OF THE RARER FORMS OF HERNIA.

Delivered at the Royal College of Surgeons of England on Feb. 19th, 21st, and 23rd, 1900,

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LECTURE III.[1]

Delivered on Feb. 23rd.

HERNIA OF THE BLADDER.

MR. VICE-PRESIDENT AND GENTLEMEN,—Hernia of the bladder is still regarded as a surgical curiosity. During the last decade the number of recorded cases has been steadily increasing. Up to the present time approximately 200 cases have been recorded. Of these only 38 were observed before the year 1890. In 1890 it may be supposed that Bassini's operation began to assert its claim to be considered as one of the most successful of the methods for the radical cure of inguinal hernia. One of the features of this operation is the necessity it imposes upon the surgeon of opening up the inguinal canal and exposing to view that portion of the sac, one and a-half inches or less in length, which lies between the internal and external abdominal rings. If a small process of the bladder lay externally in contact with, or internally as a content of, the sac, it would inevitably be exposed, if not at the moment accurately observed or appreciated, during this procedure. An examination of all the published cases elicits a fact of some interest in this regard. All the earlier cases contained a very large amount of the bladder; some of them, verified by post-mortem examination, contained the whole bladder, including in at least two cases the prostate also. It is more than likely that any small or medium-sized hernia containing probably only a very insignificant portion of the bladder, would pass unrecognised in the days when a hernia, unless strangled, was seldom or never submitted to operation.

DEFINITION.

Hernia of the bladder may be defined as the appearance of the bladder at any of the usual hernial orifices, whether in

[1] Lectures I. and II. were published in THE LANCET of Feb. 24th, 1900.

relation with the peritoneum or not. This definition, though not scientifically exact, will probably best meet the exigencies of the case. Strictly speaking, an abdominal "hernia" cannot exist without a sac; but as the clinical manifestations of a case of bladder hernia without sac are to all intents indistinguishable from those where the sac is partial or complete no good purpose could be served by separating, for academic purposes, the descriptions of the several conditions.

History.

It is generally stated, upon the authority of T. Bartolin, that the first case of hernia of the bladder was recorded in 1520 by G. D. Sala. In Verdier's monograph, to be subsequently referred to, this statement is repeated in a quotation from Gunz. Giovanni Domenico Sala, Professor of Medicine at Padua, lived from 1579 to 1644. Thomas Bartolin lived from 1616 to 1680; in his "Histor. Anatomic., centur IV., hist. 28," he remarks, giving no date, that a case of bladder hernia had been observed in Venice by Sala, "Præceptor olim et amicus noster." The date 1520 is therefore, without doubt, a misprint for 1620. The first person to record a case of hernia of this variety was Felix Plater, of Basle, who lived from 1536 to 1614. No date is given on the original, but Verdier fixes the date at 1550. The classic account of this disease was written by Verdier in 1753. From that year up to 1890 practically no observations of any importance were recorded. Isolated cases of greater or less interest were recorded by Percival Pott (who removed a stone from an inguinal cystocele), John Hunter (a specimen, "Hunterian," of inguinal cystocele in a lion is in the Museum of the Royal College of Surgeons of England), Astley Cooper, and others. In the last few years papers of importance have been written by Legard, Ansinn, Lotheissen, Brunner, Berger, Jaboulay, Monod and Delagenière, and Sjövall.

Frequency.

Inguinal hernia, much more frequently than crural, contains the bladder. It is difficult to gauge with even remote accuracy the percentage occurrence of cystocele. From recently published statistics I select the following list, for in each of these instances all the cases of hernia submitted to operation are enumerated without selection:—

Lucas-Championnière	in	275	operations	found	2	bladder hernias.
Krönlein	,,	276	,,	,,	1	,, hernia.
Bassini	,,	262	,,	,,	1	,, ,,
Habs	,,	200	,,	,,	1	,, ,,
Corazza	,,	105	,,	,,	1	,, ,,
Monari (Novaro's cases)	,,	223	,,	,,	6	,, hernias.
Montegnacco	,,	500	,,	,,	4	,, ,,
Von Hacker	,,	702	,,	,,	7	,, ,,
Total		2543	cases.		23	bladder hernias.

This would give, roughly, 1 per cent. of cystocele.

Ssalistschew, writing in 1897, gave the percentage as 5·88. One fact, which many surgeons attest, is worthy of remark. A very large number of cases of hernia may be submitted to the operation for the radical cure without any case of bladder implication being observed. Then, unexpectedly, during an operation a portion of the bladder, recognised and duly attested, is seen. In subsequent operations special attention is paid to the point, and a careful search is made for any evidence of involvement of the bladder. Consequent upon this several similar cases are noticed. The rarity of recorded examples is due, it would seem, rather to a want of pertinent observation than to the infrequent existence of the cases. That a more intimate examination of the neck of the sac and of that portion of the sac lying within the abdominal wall results in the discovery of small bladder pouches is shown by the cases recorded prior to, and subsequent to, the introduction of Bassini's operation. In the Innsbruck clinic 455 cases were operated upon by Von Hacker before a cystocele was observed. After the occurrence of this case instruction was given that in all operations special emphasis was to be laid upon an examination of the neck of the sac. In the next 187 cases operated upon by Bassini's method six cystoceles were laid bare. In 60 cases of Kocher's operation no evidence of bladder descent was noticed. By Kocher's method it would be almost impossible to recognise a cystocele limited to the inguinal canal. The conclusion would seem to be inevitable that, as Lotheissen says, "the more exact the stripping of the sac, quite up to the deep epigastric artery, the more likely will cystocele, especially in its earlier stages, be discovered."

Broadly speaking, it may be affirmed that hernia of the bladder is a disease of the aged and enfeebled. Four cases only of inguinal cystocele have been recorded in children. The first was recorded by Percival Pott in a child six years old. The hernia was supposed to be a "tumour" and was incised; it was recognised as the bladder when a calculus was removed. The second was recorded by Wyeth in a child, two and a half years old, with incarcerated hernia; the bladder was incised and stitched; a good recovery followed. The third was recorded by Kummer in a child five years old. It was an omental hernia, recurring one year after a radical cure. The fourth was recorded by Lotheissen in a boy 11 years old. The average age of the males in all published cases was 51 years and of the females 44 years. The majority of the cases occur between the ages of 50 and 60 years. The relative frequency on the right and left sides is as 1·46 to 1 (Sjövall).

The following table, arranged after the fashion of Brunner's, gives all the recorded cases I have found:—

Men, 134	Inguinal, 128	Right	64
		Left	49
		Double	4
		Not mentioned	11
	Crural, 2	Right	1
		Left	1
	Perineal		2
	Other forms		2
Women, 45	Inguinal, 11	Right	3
		Left	6
		Double	1
		Not mentioned	1
	Crural 27	Right	22
		Left	5
	Perineal		4
	Other forms		3
Sex not stated, 9	Inguinal		6
	Perineal		2
	Other forms		1

Varieties of Cystocele.

There are three distinct forms of cystocele which may be most aptly described after the manner of Jaboulay and Villard as: (1) intra-peritoneal (Fig. 11 *c*); (2) para-peritoneal (Fig. 11 *b*); and (3) extra-peritoneal (Fig. 11 *a*).

FIG. 11.

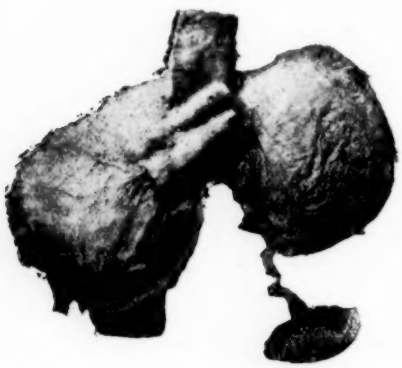
The three varieties of cystocele. A. Extra-peritoneal. B. Para-peritoneal. C. Intra-peritoneal.

1. *Intra-peritoneal cystocele.* (*Tumeur herniaire avec intussusception de la vessie. Duret: Hernie par bascule.*)—In this variety the conditions are as follows. There is a complete hernial sac occupying the position of an oblique inguinal hernia; the neck of the sac, that is to say, is external to the deep epigastric artery. Into this sac a portion of the bladder *completely covered by peritoneum* descends. That portion of the bladder implicated in the hernia is the upper part of the posterior surface. This form of hernia is rare. According to Lotheissen, probably only about 6 per cent. of all cases of cystocele are of the intra-peritoneal form. This estimate seems to me to be in excess of the truth. Out of nearly 200 cases I can only discover four of the inguinal variety and one of the femoral (Gibson) in which the description leaves no doubt as to the exact nature of the hernia. The hernia in all cases was very large and the hernial rings widely dilated. It is always *secondary* in origin. The sac may contain the bladder only or bladder with intestine or omentum. On tracing the peritoneum of the inner wall of the sac inside the abdomen it is found to sweep round a little distance inside the internal abdominal ring in order to become continuous with that which clothes the bladder. The viscus must therefore be twisted round on its vertical axis, a fact which is recognised by the description "*hernie par bascule*" of Leroux and others.

2. *Para-peritoneal cystocele* (Fig. 12). (*Tumeur herniaire avec adossement de la vessie.*)—In this form there is a hernial sac, either of the oblique or direct form. On the inner side of the sac lies the bladder, in such manner that the peritoneum of the inner wall of the sac is the serous

covering of the outer wall of the bladder. The rest of the bladder outside the abdomen has no peritoneal covering. The viscus, therefore, is outside the sac; it is not a part of the contents of the hernia. The hernial sac may contain intestines, large or small omentum (Guterbock, Sorel, Berger), ovary (Guinard), or tube and ovary (Lejars, Reymond), or it may be found empty. This variety forms, according to Lotheissen, about 24 per cent. of all recorded cases. The estimate is probably far below the truth. Since accurate and exact records have been kept of these cases the proportion has been considerably greater. Sjövall gives 40 per cent. as correct, but even this is probably too small. In not a few

FIG. 12.



Vesical hernia. Sir Astley Cooper's case. The bladder is covered by peritoneum except at the inner and posterior part. Para-peritoneal form. (Guy's Hospital Museum, No. 1170.)

cases believed at first to be extra-peritoneal a further and more careful examination has revealed a small and inconspicuous peritoneal descent on the outer side of the bladder. The relative size of peritoneal sac and bladder implicated in the hernia varies within considerable limits. On the one hand, the sac may be large and capacious and a mere fringe of bladder be present in the canal, or, on the other hand, the bladder involved may be large and bulky and the peritoneal descent quite trivial and inconspicuous. In about one half of the total cases, 51 per cent. (Sjövall), the bladder has been thickly covered with fat. When the sac has been stripped up after the reduction of its contents a thickening, more or less massive, of the upper and inner portion has been discovered. This thickening has been looked upon as a lipoma, a second sac, a cyst in connexion with the sac, or as mere indeterminate thickening. In two cases at least the position of the bladder was different from that which I have described. In one, an inguinal hernia, the relation of the bladder is thus described: "Outside the sac and lying external to it and slightly below it" a long process was found which on examination revealed the bladder. In a femoral hernia the bladder is described as lying "on the outer side."

3. *Extra-peritoneal cystocele.* (*Cystocele sans sac séreux, Duret.*)—This is a rare form. As has been mentioned, some cases apparently of this variety prove on examination to be "para-peritoneal." According to Brunner only six cases have been confirmed by post-mortem examination. It seems open to question whether any case of this form should be definitely accepted without the evidence of a careful dissection. The small peritoneal diverticulum converting an "extra-peritoneal" into a "para-peritoneal" example may be quite insignificant. Of the six cases four were of the inguinal variety and two were femoral. As a general rule the hernia is very small, of the size of a walnut or thereabouts. The largest tumour was "of the size of an orange." All extra-peritoneal herniæ are of the "direct" variety.

Of the three forms, then, the para-peritoneal is, beyond all question, the most frequent. It includes the smallest as well as the largest herniæ. The amount of the bladder engaged, too, in the hernia varies between the two extremes. In some cases, either para-peritoneal or extra-peritoneal, the merest "pinch" of the viscus may lie in the inguinal canal. In others, notably in one recorded and figured by Krönlein, the whole bladder, with the prostate, portions of both ureters and the vesiculæ, with the terminal portions of the vasa deferentia, may lie outside the abdomen. It is incidentally worth remark that Reichel has described as "inguinal hernia" which contained only a small dilated portion of the ureter on the right side. The bladder wall engaged in the hernia is, in about half the recorded cases, covered with fat—sometimes densely so. There is occasionally a slight thickening of the bladder, but more frequently there is thinning. To such an extent may this occur that the wall appears no thicker than the serous membrane over it. In a few cases the bladder has been recognised by the presence of muscular fibres.

On reading through the reports of cases one is struck by the constant repetition of the phrase "diverticulum" of the bladder. The pouch-like protrusion is said to be connected with the larger intra-pelvic portion of the bladder by a narrow neck. Percival Pott describes the size of the connecting channel in his case as "about the breadth of the largest wheat straw." Recent investigations, however, certainly tend to show that, speaking accurately, no diverticulum ever exists. A certain appearance of narrowing may be seen at the internal abdominal ring as a result of constriction there, but all that portion of the viscus contained in the canal or scrotum is nevertheless bladder, more or less altered and attenuated. So narrow may the neck of the sac be that urine finding its way in from an over-distended bladder is with difficulty returned. Inflammatory process may then develop and the urine retained undergoes decomposition. A phosphatic deposit on the walls may be thrown down, and to such a degree may this occur that a definite calculus may be formed. Stalpart van der Wiel makes mention of two cases in which inflammation resulted in abscess of the groin. On the abscesses bursting calculi were discharged. J. L. Petit records the case of a man, the subject of a vesical hernia, in whom it was possible to feel several small stones in the protruded viscus. The stones were small in size, could be made to pass to the intra-abdominal portion of the bladder, and eventually were voided with the urine. Gross, Percival Pott, and Imbert record similar examples.

Intra-peritoneal cystocele is always of the oblique form, para-peritoneal may be either oblique or direct, extra-peritoneal is direct. In addition to these forms of hernia of the bladder there are two other varieties which have been described by Hermes as "operative cystocele" (*cystocele opératoire*). In the first of these the bladder does not lie within the inguinal canal; but as a result of the stripping of the sac up to the internal abdominal ring and of the traction upon the sac before its transfixion a small tongue-shaped slip of the viscus is dragged down below the level of the internal abdominal ring. In such a condition the bladder may readily be pierced by the needle or included in the ligature. The more complete the stripping of the sac and the more vigorous the traction exerted the more likely is it that the bladder will be dragged downwards. In Bassini's and similar operations operative cystocele is therefore proportionally more frequent than in those procedures not involving a laying open of the canal. The second form of operative cystocele occurs in patients who have been subjected to the "radical cure" ineffectually (*cystocele post-opératoire*). The conditions of such a hernia are essentially different from those of the ordinary hernia and it is well to emphasise that difference by a separate classification.

ETIOLOGY.

The explanation of the existence of the bladder within a hernial sac is a problem that has exercised the minds of surgeons for over a couple of centuries. Felix Plater, who recorded the first example of this disease, was at a loss to understand how an organ usually so fixed in the true pelvis could come to be outside the abdomen. Mery, who early in the last century recorded three cases, looked upon the hernia as congenital in origin, and his view has been supported by Armands, Emmerts, and others. During the early years of life the bladder is an abdominal rather than a pelvic organ, and any congenital defect would, one might think, be calculated rather to induce a hernia during those years than in later life when the bladder has settled in the pelvis. The number of bladder hernias reported in children (see above) is remarkably few only

four cases being known. Investigations carried out by Englisch in 1877 suggest to him that an abnormal condition of the ligamenta vesico-ombilicalia lateralia, an ineffective or irregular development that is to say, may be responsible for the initial fault. The premature involution of the vessel contained in this fold may lead to the formation of strong peritoneal folds which render the resistance to the backward distension of the bladder considerably greater than to the lateral. The bladder slowly widens out and reaches the internal abdominal ring more readily than under normal conditions. Peritoneal fossæ to the outer side of these folds are described by Waldeyer and Aschoff. Berger has remarked that "the predisposing causes of vesical hernia are those which lead to an increase in the capacity of the bladder and determine a thinning of its walls."

In order to permit of the engagement of the bladder in the internal abdominal ring the organ must have suffered some deviation from the normal. Its wall must in many cases have undergone such thinning as commonly results from frequent and long-continued over-distension. It is therefore probable, in the first place, that any disease or defect in the lower urinary tract would predispose to such pathological alteration. Stricture of the urethra, prostatic hypertrophy, with bladder atony, and the atony following acute cystitis, may be mentioned as not unlikely to cause the thinned, flaccid, degenerate bladder to approach the inguinal region. But prostatic hypertrophy is common, bladder hernia is rare, and although the association of the two is striking in its frequency it is natural to suppose that there are other factors at work.

It has already been mentioned that in cases of hernia of the bladder the viscus is more or less thickly covered with fat. This fact was, I believe, first noted by Verdier, and is also mentioned by Keate, "Cases of Hydrocele, with Observations on a Peculiar Method of Treating that Disease, to which are subjoined a Singular Case of Hernia Vesicæ Urinariæ, &c." This paper was published in London in 1788 and in it Keate remarks: "From the great abundance of fat all round the bladder it might be concluded that the fat had facilitated the descent of the bladder." Scarpa in his work remarks: "In another subject I found among the coverings of the testis a large quantity of fat, which extended up the cord through the canal and blended with the fat lying by the side of the bladder. When I pulled upon the fat between the testis and the neck of the sac I drew the bladder down so that at last it reached to the level of the testis." This "lipome preherniaire" has been accredited by Monod and Dalagenière with a considerable influence in the etiology of hernia of the bladder. "Occasionally soft, almost diffluent, this fat sometimes forms merely pellets of fat, at other times a thick stratum of fat which surrounds the bladder." An examination of a number of cases where the inguinal region and the pelvis may be considered normal reveals the following condition. Extending along the cord as it lies in the inguinal canal is, in the majority of cases, a certain amount of fat. Occasionally in small round granules, but more commonly in elongated strings, this fat is of a peculiar soft, succulent, oily, and homogeneous character. At the internal abdominal ring it turns inwards with the cord and is continuous with the fat surrounding the upper part of the bladder. Occasionally the fat is continuous with a more or less well-defined cord of fat extending upwards along the psoas muscle to the kidney. Lockwood has recently shown in his admirable little book on "Hernia, Hydrocele, &c.," that not a few cases diagnosed as inguinal hernia reveal, on the laying open of the inguinal canal, nothing more than a "lipoma of the spermatic cord," a condition, that is, in which the fat I am describing has undergone a considerable increase in bulk. A further interesting fact, to which both Andrewes and Lockwood have drawn attention, is that in this fat some remains of adrenal tissue have been found. In a case of my own a large lipoma extending from the scrotum up the cord, through the inguinal canal, filling the iliac fossa, and extending upwards almost to the pancreas, contained a fair number of epithelial cells in varying stages of degeneration. This fat, therefore, has, morphologically, a past, and clinically it probably has a future. An examination of the fat surrounding the bladder shows that it does not merely coat the wall, but that it insinuates itself to some degree between the muscle fibres themselves. Monod and Delagenière in a striking contribution to the study of this subject assert that the excessive development of this fat, its conversion into the "*lipome herniaire*," results in the fixing the bladder at or near the internal abdominal ring. Other causes, laxity of the abdominal wall, increase of intra-abdominal pressure from effort, and so forth, result in the forcible expulsion of the upper and outer portion of the viscus from the abdomen. Jaboulay, who confirms the experience of most surgeons as to the existence of this doughy cake of fat, considers that it acts not as a point of fixation, but that it favours the descent of the bladder "*par glissement*."

It has been generally overlooked that this supposed method of the formation of vesical hernia is nothing more than an old friend under a new name. German authors have for over a century considered the possibility of the formation of peritoneal sac by small masses of fat. The "Zug theorie" endeavours to explain the existence of hernial sacs by the dragging on the peritoneum by these small pellets of fat, local increases of the ordinary sub-peritoneal fatty tissue. Pelletan, who wrote in 1780, suggested that these fat nodules might induce the descent of a hernia. In these two conditions the over-distension due generally to prostatic diseases, with the associated loss of general muscular power, and the existence of the pre-vesical fat, we probably have the two chief factors which lead to the development of cystocele. In the various forms these factors do not, in all probability, act with equal effect. In extra-peritoneal cystocele are found distension of the bladder, feebleness of its muscular coat, strenuous efforts to empty the bladder, wasting, bulging, and laxity of the lower abdominal wall—the condition, in fact, which has been aptly and graphically described by Guyon under the term "prostatism." In para-peritoneal cystocele, as Jaboulay has pointed out, the hernia is generally voluminous. In such cases the cystocele is secondary and is due to the dragging down of, and further demands upon, the parietal peritoneum. If, on the other hand, the hernia is small, the sac quite inconsiderable and probably empty, while the bladder is of considerable bulk, densely hidden with fat, it is probable that the "*lipome herniaire*" of Monod and Delagenière may be largely responsible for the rupture. With regard to the rare form of intra-peritoneal cystocele two explanations have been offered. Gerard-Marchant writing in 1876 suggests that in an ordinary case of inguinal hernia the intestine or omentum normally present may, on an occasion of reduction, become in consequence of some trifling inflammatory condition adherent to the peritoneally clad posterior and superior part of the bladder. This adhesion may become firm and in the subsequent descent of the omentum or gut implicated the attached bladder may also be dragged down. Leroux quotes a case observed by him, where he attributed the vesical involvement to epiploic adhesions such as this. This theory, simple and fascinating though it is, is in certain cases inadmissible, for no adhesions are discovered. Such a case is recorded by Krönlein. In these later cases an unusually copious distension of the bladder has been noticed, and it is suggested by certain French authors (Duret, Jaboulay, Villard, and others) that in such cases the peritoneal traction causes the ballooned posterior part of the bladder to topple over to the affected side "*par bascule*" and to become in that way engaged in the hernial orifice. As so few cases have been recorded it seems impossible at present to attempt any completely satisfactory explanation, but it is probable that one or other of the causes mentioned will account for the majority of the cases.

To sum up the causes leading to the development of a hernia of the bladder we may state the matter thus:—1. There must be a condition of *permanent vesical distension*. As a result of this enlargement the normal anatomical relations of the bladder undergo considerable modification. The increase is not merely in the vertical direction, but also in the transverse. The bladder is therefore brought into relationship with the inguinal fossæ. 2. There must be a condition of *motor insufficiency* of the bladder. The wall is thinned in certainly the great majority of cases. Ssalistschew gives it as his experience that the bladder wall may be not only not thinned but actually thickened and the muscular fibres considerably hypertrophied. A glance through the recorded cases, however, is amply sufficient to show that the atrophy of the muscular coat is incomparably more frequent. 3. There must be a condition of *laxity of the abdominal wall*, especially in the lower half, or of undue patency of the inguinal canal and unusual size of the abdominal rings. A bulging of the lower abdominal wall is very common in cases of hernia occurring in middle or old age. It has been described and figured by Glenard, Macready, and others.

4. As supplementary to these three there is also necessary the *increase of intra-abdominal pressure, the "effort"* upon which Nélaton in 1857 was the first to lay definite emphasis.

Undoubtedly these essential conditions find themselves represented to perfection in the case of prostatic enlargement. In an enlargement of the middle lobe of the prostate, of such kind that the lobe acts as a ball-valve, they would be more clearly defined than in other forms of prostatic enlargement. In those cases where prostatic hypertrophy is not a factor, and to some, at present uncertain, extent even in these, we must allow some share as a causative factor to the "*lipome herniaire*" of Monod. The occurrence of this massive deposit of fat is much too frequent to be merely a coincidence. It is only right, however, to state that its influence is strenuously denied by many observers, among whom Lejars and Imbert are the most emphatic.

It will be seen from this description that cystocele is both primary and secondary. *Primary cystocele* results from two conditions: (1) in which the bladder through persistent overdistension, associated with muscular atony, laxity of the abdominal wall, and "effort," is forced into the inguinal canal; and (2) in which the traction or fixation of a lipoma causes the descent of the organ. *Secondary cystocele* results from (1) the traction of a pre-existing hernia; and (2) the protrusion of the peritoneally clad portion of a lax, distended bladder into a hernial sac of old standing. This may be spontaneous or the result of omental adhesion. The omentum in a hernia may, as a result of injury, temporary strangulation, or other cause, suffer inflammation. On reduction it may be in contact with, and adhere to, the bladder, and thus be responsible for the hernial descent of that organ.

SYMPTOMS AND SIGNS.

At the outset it must be admitted that any special signs and symptoms of the implication of the bladder in a hernia may be entirely absent. The number of cases that have been diagnosed before operation does not amount, at a generous estimate, to more than 5 per cent. of the whole. A reference to the table which follows shows that in a remarkably large number of the recorded cases the first appreciation of the implication of the bladder came after its wounding during the operation. In some few cases a diagnosis before operation has been made, and in these, of which my own first case is a striking example, the symptoms do not admit of misconstruction. The signs of a bladder hernia of moderate or large size are those of a hernia which at times contains fluid. The tumour is generally rounded, smooth, soft, and fluctuating. The fluid is capable of reduction under pressure, and in a few cases it has been recorded that the patient has become expert in assuming a certain posture in order to facilitate the return of the urine. The size of the hernia is liable to rapid and considerable alteration. Within a couple of hours it may alter from the bulk of a lemon to the size of an average water-melon. On percussion such a tumour is almost wholly dull. The tumour in whole or in part, except in the rare intra-peritoneal form, is irreducible. The portion left behind after reduction has been carried out as far as is possible, is thick and doughy in consistence, being made up of the "*lipome herniaire*." As Sir Astley Cooper pointed out, the scrotal swelling is distinguished from hydrocele by the fact that it is not translucent.

The functional characteristics are striking. The chief of these is the "*miction en deux temps*," the divided micturition. A patient so affected voids urine and empties the portion of the bladder in the pelvis. Then on pressure being applied to the hernia the urine it contains is returned within the pelvic portion of the bladder and thence passes by the urethra. Micturition is in two stages and is associated with a simultaneous lessening of the hernial swelling. If the bladder, after being naturally emptied, is filled by the injection of lotion the fluid will pass through the canal and distend the hernial tumour. In some cases it has been possible to pass a sound or a catheter through the urethra into the bladder and out by the inguinal canal, so that the beak could be felt in the hernia. Pressure upon the hernial swelling produces a desire, which with increasing pressure becomes irresistible, to micturate and a few drops of urine may be involuntarily passed. In a few of the cases it has been remarked that there was considerable difficulty in emptying the scrotal portion of the bladder into the pelvic portion on account of the narrowness or compression of the joining isthmus. Guterbock emphasises the importance of a rectal examination, asserting that the normal bulging of a distended bladder towards the rectum is absent. Hernia of the bladder is very rarely strangulated, but not infrequently there have been symptoms simulating and suggesting strangulation. Such are nausea and vomiting, abdominal distension, obstruction of fæces, and flatus. They, however, have never had the acuteness of those present in true strangulation. The most distressing symptom in a case under my care was hiccough, which was persistent and exhausting. In two cases recorded by Hermes where symptoms suggesting strangulation were present no gut was found in the sac on operation. In the severer cases the general aspect of the case would suggest omental rather than intestinal strangulation. The following table based upon one prepared by Brunner, and including, so far as I am aware, all the recorded cases, shows almost at a glance the chief features of the cases.

HERNIA OF THE BLADDER.

Total recorded cases, 171.

Cystocele diagnosed: no operation					13 cases.
(In three of these diagnosis was confirmed after death.)					
Cystocele diagnosed: operation					6 cases.
Bladder wounded (resection)	1	6			
Bladder not wounded	5				
Cystocele found: after wrong diagnosis					4 cases.
(3 diagnosed as abscess; 1 as sarcocele.)					
Cystocele, first discovered at operation					107 cases.
Bladder recognised and not wounded				49	
" wounded and recognised				58	
As follows:—					
Wounded accidentally, though recognised			2		
Unexpectedly wounded			26		
Intentionally incised			23		
Being mistaken for:—					
The sac	3				
A second sac	8				
Tumour	4				
Cyst	1	23			58*
Omentum	2				
Lipoma	2				
Not mentioned	3				
Incised for diagnostic purposes			5		
" to confirm diagnosis			2		
Cystocele, first recognised after operation because of wounding of bladder					22 cases
Wound not noticed at operation	6				
Supposed to be sac	9	22			
" " second sac	5				
" " lipoma	2				
Cystocele, found post-mortem					19 cases

* Bladder wounded and recognised 58

Result.

The cases were dealt with as follows:—	No. of cases.	Healing without fistula.	Fistula	Death.
Bladder simply left open	2	0	2	0
" stitched to skin	4	0	3	1
" drained by tube	1	0	0	1
" ligatured	3	0	1	2
Fastened in ordinary suprapubic incision, made for the purpose	1	0	0	1
Suture of bladder—simple	10	5	2	3
" " double layer	15	13	2	0
" " triple layer	12	6	5	1
Suture; no details	10	4	5	1
Total	58	28	20	10

DIFFERENTIAL DIAGNOSIS.

Brunner makes the apt remark that there is "scarcely any province in surgery where so many mistaken diagnoses are made" as in hernia of the bladder. A reference to the preceding table shows that out of 171 cases which are given in some detail only nineteen cases were diagnosed and in only nine of these are we certain that cystocele existed; six were proved by operation and three by post-mortem examination. In my own three cases a diagnosis was made in one, in the second the herniated portion of the bladder had a capacity only equal to that of a walnut and therefore caused no symptoms, and the third was an "operative cystocele." My own first case had before I saw the patient been treated as hydrocele and tapped on two occasions. The false diagnosis of hydrocele, indeed, is that most commonly indulged in, and in cases where a large portion of the bladder is implicated, and where the wall is thin and the communicating neck is no wider than "the largest wheat straw," one can readily understand that the physical conditions in the two cases are apt to be confused. A cystocele of any bulk can, however, be distinguished by the following differences: it is opaque, is fluid, is reducible, reduction is attended with the desire to urinate, and micturition is effected in two stages. The presence

of *fluid in a hernial sac* may mimic with success a herniated bladder. On the reduction of the fluid, which is unattended by urinary discomfort, there is not usually that massive thickening of the inner and posterior part of the sac to be felt to which the "*lipome herniaire*" gives rise. A case illustrating this difficulty of diagnosis is related by Pelletan. At the outset of an operation for a strangled inguinal hernia he chanced to notice that pressure upon the scrotum caused the evacuation of a spurt of urine; he not unnaturally concluded that the bladder had descended into the hernia, but on subsequent post-mortem examination the bladder was found in its normal position in the pelvis. Brunner has made the suggestion that from the clinical point of view we should describe two classes of cystocele—the "manifest" and the "latent." The "manifest" would include those cases where owing to the large portion of the bladder implicated the signs and symptoms are unmistakeable, and the "latent" those where only a trace of the viscus is involved and where therefore any signs or symptoms at all characteristic are entirely wanting.

TREATMENT.

It is, of course, quite impossible for a patient who is suffering from a hernia of the bladder (which save in the intra-peritoneal form and sometimes then is irreducible) to wear a truss. Such an instrument would only add to the inconvenience and the danger of the case. In all cases, unless there is decided objection upon other grounds, an operation should be performed. The frequency with which the bladder has been wounded during operation makes it a matter of considerable importance that the surgeon should be able to recognise the bladder when it exists as a hernial content. There are two chief conditions which facilitate this recognition: (1) a thickening or a deposit of fat at the inner and back part of the sac; and (2) the presence of interlacing muscular bundles in a similar position. Any thickening of the upper part of the sac, especially on the inner side, should be treated with the profoundest respect. An examination of the recorded errors shows that in many cases even where the thickening has been noticed sufficient care has not been exercised in investigating its nature and harm has followed. Unless the neck of the stripped sac is perfectly free and is normal in appearance and to the touch it should not be transfixed, ligatured, or twisted. Lejars remarks that in many cases the bladder has been wounded because it was not seen. The importance, therefore, of a clean stripping of the sac and of a minute examination of its neck can hardly be over-emphasised. The advantage which operations like Bassini's, Halsted's, and Lockwood's exhibit in this regard need not be enlarged upon. If a fairly large area of the sac is involved as a covering of the bladder it must not be stripped up. The peritoneum can be cut round the bladder and on the outer side close up to the ring and the circular wound stitched up by continuous or interrupted sutures. The bladder loosened gently from its surroundings (it has been torn even when recognised, and therefore requires delicate handling) is returned into the abdomen, and the rings and canal are stitched up in such manner as is considered most satisfactory. In the great majority of, if not in all, cases it will be necessary for the patient after operation to wear a truss. The operation may be said to have for its object the rendering of the condition of the inguinal region such that a truss can be readily and safely worn.

When the bladder is wounded and recognised the best plan undoubtedly is to stitch up the wound with stitches which do not include the mucous membrane. A single layer, or even double or triple layers of sutures have been employed. Probably two layers are ample. In some cases the bladder has been wounded and not recognised until some time after the operation. Within 12, 24, or 48 hours it may be noticed in such a case that the dressings are soiled with a more or less copious discharge of thin yellow fluid, or blood may be present in the urine voided after recovery from the anæsthetic. In such cases the wound must be re-opened, and if possible the bladder wound should be accurately stitched up. A urinary fistula may result and may persist for an indefinite period, or it may gradually close up and the wound heal soundly. Monod and Delageniére suggest that when the bladder is wounded that portion of it which is implicated in the hernia should be resected and the wound left in the bladder stitched up. Lanz advises the turning up of the peritoneal flap before resection, so that the line of sutures in the bladder may be covered in by the flap when replaced. I can conceive no possible advantage from resection, unless gangrene of the wall of the bladder were present, and as this is an exceedingly unlikely complication the method is not one to be advocated. If it is ever justifiable the procedure of Lanz would certainly add a measure of safety.

PROGNOSIS.

The serious aspect of hernia of the bladder results from the attendant maladies. There is nothing in the bladder involvement as such that is untoward. The bodily feebleness, the prostatic enlargement with its secondary effects on the bladder, kidneys, and general health, and the not infrequent wounding of the viscus during operation are the circumstances that create, or add to, the seriousness of the case. Where the presence of the bladder in a hernial sac is merely an episode, without any bearing upon the case, the dangers are those merely of an ordinary hernia.

CRURAL CYSTOCELE.

What has been written of inguinal cystocele applies almost equally to the femoral variety. 33 cases are recorded by Ansinn in a recent pamphlet; of these 30 occurred in women. The part played by the prostate in the production of hernia of the bladder in men is assumed very probably by pregnancy and its attendant conditions in women. According to the records of these cases, which in some respects are not sufficiently detailed, 20 cases are extra-peritoneal, eight are para-peritoneal and one is intra-peritoneal; of the rest it is impossible to speak with accuracy. Only three patients presented symptoms sufficiently definite to render a diagnosis possible. These cases are recorded by Verdier, Meienberger and Guinard. During operation the bladder was wounded seven times, being mistaken for the sac, and in one case (Habs) for a second sac.

TUBERCULOUS DISEASE OF THE KIDNEY: ITS ETIOLOGY, PATHOLOGY, AND SURGICAL TREATMENT.

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(Continued from p. 551.)

ASSOCIATED with tuberculous disease of the kidney there are usually more or less specific inflammatory changes in the mucous membrane of the pelvis, the ureter, and the bladder. The lesions in these parts generally follow the disease of the kidney. The affection of the conducting and collecting portions of the urinary tract is brought about in the following way. If the primary focus be situated in the medulla of the kidney the disease spreads into the renal substance and the tuberculous material breaks down and discharges by bursting into the pelvis and infects the mucous membrane secondarily. Or, if the pelvis is primarily involved the débris flowing into the bladder in its course infects that viscus.

Infection by invasion along the lymphatics of the kidney from foci in the lower urinary tract.—Ascending renal tuberculosis is by no means an uncommon malady. By injecting the ureter of living animals or by studying the course of events of the disease in the human subject we can easily follow the course of events. The experiment performed by Albarran throws considerable light upon this subject. By injecting the ureter with pure cultures of tubercle bacilli and ligaturing it below the point of puncture he was able to study the process by which infection proceeded along the duct and the morbid lesions associated therewith. The infection extends upwards from the bladder to the kidney. The bladder is usually contracted, its muscular coat is hypertrophied, and the mucous membrane is indurated. In the ureters and the bladder the tuberculous process begins by the formation of tubercles in the mucous membrane, and these breaking down form in a typical manner the so-called lenticular ulcers (Fig. 8) which are characterised by a flat base covered by caseous matter and sharp rugged borders within which little miliary nodules are situated. The ulcers are at first circular, usually superficial; their

edges are slightly raised and are surrounded by a pale anæmic zone set in a deeply hyperæmic mucous membrane. In the bladder these ulcers frequently coalesce, forming larger ones of variously irregular forms. Their favourite seat is—probably on account of the mode of infection—the trigone and fundus of the viscus. In this form of the disease the kidney may be rapidly destroyed by hydronephrosis and the swelling may attain an enormous size through dilatation of the kidney by its fluid contents, and at the same time the surface of the distended pelvis and the renal parenchyma may become occupied by tuberculous foci. The infection of the kidney through the pelvis has been already described. In ascending renal tuberculosis the course of events is so different from that which is seen in the descending variety of the disease

FIG. 8.

Tuberculous ulceration of the ureter.

that clinically they can be distinguished easily from one another. The former is characterised by the early obstruction of the escape of urine from the pelvis, hence the most prominent features of the disease are symptoms and signs indicative of hydronephrosis or pyonephrosis. But the contents of the dilated pelvis differ in tuberculous disease from that observed in a purely septic lesion. They may be purulent but not necessarily so; indeed, they may be quite aseptic and may consist of broken-down renal tissue and tuberculous débris, or they may present the appearance of very soft, putty-like material. The renal sac in such instances is usually unilocular but it is divided more or less by deep septa which represent all that remains of the calices. These pouches generally correspond with the prominences, while the septa mark the depressions, on the surface of the kidney, and sometimes the latter are so deep that they give the kidney a distinctly lobulated appearance on its external surface. In some instances the obstruction to the ureter is complete only occasionally, and then the retention causes renal colic, while in the intervals the contents of the kidney escape and appear in the urine. The urine in such cases is usually clear for some days, during which time the subjective symptoms are aggravated; then suddenly the urine becomes turbulent, a sudden escape of tuberculous débris takes place, and for a time the patient is relieved.

Extension by contagion along the lumina of the excretory ducts.—This method of extension is seen in cases of ascending tuberculous lesions and the progress is much the same as that which is observed in the conveyance of septic infection. In some cases the whole route of infection may be traced in the walls or on the surface of the bladder, the ureters, and the pelvis, right into the uriniferous tubules of the pyramids. These tubules are found in many instances to be blocked by colonies of tubercle bacilli alone, but more frequently they are mixed with other organisms. The aggregations of microbes are surrounded by areas of inflamed tissue the exact character of which depends upon the age of the lesion. The foci are limited to the medullary portion of the kidney at first. In the early stage the specific inflammatory changes are slight and consist chiefly of degenerative processes in the epithelium and infiltration of leucocytes around and between the tubules, but gradually as the disease extends from the original centre disintegration of the renal parenchyma occurs and small cavities or abscesses form. The organisms may by plugging the lumina keep back the excretion and dilate the tubules. In this way the vitality of the epithelium and of the basement membrane becomes impaired and ultimately rupture occurs and the contents of the tubule is permitted to escape into the lymphatic spaces. Then the organisms rapidly spread and very soon excite fresh lesions in more distant parts of the organ.

Infection by the extension of the disease from other organs by continuity.—The isolated position of the kidneys protects them from infection by this process. Their deep situation in the lumbar region, far away from external influences, except through the lower urinary tract and the blood-stream, shut off from the abdominal cavity and surrounded by a firm fibrous capsule, make contagion by continuity difficult. But as we find in septic lesion of the kidney so also in tuberculous lesion, it must be recognised that contagion by this means does occur. The extension of tuberculous infection through the capsule is the least common channel of invasion of the renal substance, so that even in cases where the suprarenal bodies are involved in the tuberculous process the corresponding kidney is rarely affected. I have met with only one such case; in that case the kidney became infected by continuity from a tuberculous empyema. The patient was under the care of Dr. Wood Smith while he was physician in the Glasgow Royal Infirmary. The case was one of chronic phthisis pulmonalis, in which perforation from a cavity in the lung into the pleura occurred at the left base; this led to an empyema between the diaphragm and the base of the left lung extending upwards to as high as the seventh rib. The empyema was known to exist for one month. Ultimately it perforated through the diaphragm and surrounded the left kidney. At the post-mortem examination there were found in the substance of the kidney numerous small tuberculous foci but there was no evidence of extension of the disease to the pelvis, the ureter, or the bladder. The infection evidently spread from the subcapsular lymphatic space to the lymphatics surrounding the capillaries and the uriniferous tubules.

The comparative frequency of tuberculous disease of the kidney may be judged by the following statistics quoted by Roberts: "Embracing both primary and secondary deposits, the latter being, especially in children, by far the most frequent, out of 1317 tuberculous subjects examined in the Pathological Institute of Prague (out of a total of 6000 bodies) tubercle in the kidney was found 74 times, or in the proportion of 5·6 per cent., of tuberculous subjects.[1] Among 315 tuberculous children Rilliet and Barthez found tubercle in the kidneys 49 times, or in the proportion of 15·7 per cent." Dickinson also alludes to the relative frequency of renal tuberculosis in children and in adults, and in a table compiled from the post-mortem records of St. George's Hospital and the Hospital for Sick Children, Great Ormond-street, he shows the frequency of tuberculous formations in the kidney and other organs in 600 post-mortem examinations, the subjects of 300 being under the age of 12 years and those of the other 300 of the age of 12 years and upwards. Of the former group 49, and of the latter group 17, suffered from tubercle in the kidney. These results correspond so closely with those of Rilliet and Barthez that there can be little doubt that renal tuberculosis in one form or another is specially a disease of early life, but whether the renal lesion is a primary or a secondary one is not shown in the statistics just referred to. Dickinson does not distinguish between the two forms, miliary and caseous; for "the miliary," he says, "become caseous as they enlarge, so that although in some cases there may be only one or only the other, yet they are continually intermixed and inseparable, as different results of the same process." From the surgeon's standpoint it must appear, however, very important to distinguish between a disease which involves the whole system and another which primarily attacks an individual organ or part of an organ, even although they are histologically the same pathological process. With the distinction just referred to in view Morris shows, by an examination of the records of the Middlesex Hospital, that of the 40 cases of tuberculous kidney met with in 2610 necropsies, 29 were miliary (secondary) and 15 were strumous (primary). Of the 29 cases of miliary tuberculosis 18 were males and 11 were females, and in 28 out of the 29 cases both kidneys were diseased, while in the 15 cases of primary renal tuberculosis (nine males and six females) both kidneys were diseased in eight patients. Another point worthy of note is the different periods of life at which the two forms of disease occur. In the miliary (secondary) tuberculosis 12 cases occurred in persons under 10 years of age, eight in persons between the ages of 10 and 30 years, six in persons over 30 years of age, and three in persons whose ages are not stated. In the scrofulous (primary) tuberculosis no cases occurred in persons under 11 years of age, five occurred

[1] Prager Vierteljahrsschrift, Band i., p. 1, 1856.

in persons between the ages of 11 and 30 years, seven in persons over 30 years of age, and three in persons whose ages are not stated.

Symptomatology.—In all cases of pyuria with the renal symptoms in men a careful examination should be made of the genital organs and of the prostate for tuberculous disease, as very often a clue which is of value in diagnosis may be thus obtained. If the symptoms are associated with rapid emaciation, anæmia, elevated evening temperature, and rapidly progressing marasmus tuberculous disease should be suspected. When the disease is limited to the parenchyma of the kidney the symptoms may be insignificant and ill-defined. When the bladder, ureter, and pelvis are not involved—that is to say, when the infection is purely tuberculous and localised to the kidney—there is seldom much pyrexia. The urine is acid and the quantity of pus is small. There is not generally much pain in the affected organ nor is the kidney much enlarged. The severity of the symptoms varies according to the form of the tuberculosis. In many cases it is a noteworthy fact that marked and advanced disease of the kidney, and even of the pelvis and ureter, may exist for long periods with total absence of symptoms pointing to a lesion in the urinary tract; hence the disease may destroy one kidney and block its ureter without being recognised. The only indications of departure from health may be impairment of the general nutrition, indicated by anæmia and emaciation, so that only late in the history of the case the attention of the physician may be directed to tuberculous disease. But when the mucous membrane of the pelvis or calices becomes involved, or when abscesses of the kidney burst into them, renal pain becomes marked. It is difficult to make any general statement as to the constitutional symptoms of tuberculosis of the urinary tract: their characteristics depend not only upon the extent of the disease and the locality involved but also upon the health or disease of other organs. In many cases emaciation and anæmia are marked, especially when there is mixed infection and the temperature is high or variable. Instances are met with, however, where tuberculous disease has existed in one kidney for a long period without any perceptible loss in weight or increase in temperature. In instances where the tuberculous lesion is small in size and localised a careful record of the temperature may reveal a slight afternoon rise of half a degree or of a degree. This slight variation in temperature in renal tuberculosis distinguishes it from a septic kidney. In the latter the variations are much greater. The fever arises in each from the action of the microbes and the amount or virulence of toxin produced by them, and consequently the pyrexia is to some extent a gauge of the activity of the morbid process. In the great majority of cases the thermometer is of much assistance, but it must be borne in mind that the pyrexia may depend more upon septic lesions in other parts than upon the aseptic renal malady. The temperature of the patient is generally from two to three or even four degrees higher in the evening than in the morning, or there may be intermittent periods of fever lasting for several consecutive days. Pain in renal tuberculosis depends upon whether the pelvis and ureter are involved in the disease. When the kidney parenchyma alone is implicated severe pain is seldom complained of and the patient only experiences a dull, dragging sensation in the loin. In cases of ascending tuberculous disease, or in advanced cases of primary renal tuberculosis where the pelvis, ureter, and bladder have become implicated, pain is often a distressing symptom. The pain sometimes simulates that of stone in the bladder. Occasionally, however, it is limited to the lumbar region or it may extend down the thighs. Frequent micturition is invariably accompanied by pain, which commences to be severe about the middle of the flow, increases towards the termination, and then subsides almost immediately the bladder is emptied. There is seldom an escape of blood with the last drops of urine and the pain and frequency are as marked during the night as in the day. In these respects the strangury of tuberculous disease differs from that met with in vesical calculus. Vesical irritation, shown by incessant and painful micturition, is a frequent and almost characteristic symptom of tuberculous disease, and this symptom may be present to a marked degree without the bladder being diseased. It is often the first symptom which attracts the patient's attention and makes him seek advice. Strangury is met with in all varieties of the disease, from the earliest to the latest stages, but it is generally most marked in the ascending lesions. It may, however, disappear or become much abated for considerable periods. In many cases swelling in the renal region is not pronounced. Sometimes, however, the kidney attains considerable dimensions and occupies the greater part of one side of the abdomen. Renal swelling sufficiently large to be made out by palpation may be produced by extensive disease of the cortex alone. (Fig. 9

FIG. 9.

Enlarged kidney (weighing 28 ounces) due to tuberculous nephritis and the formation of cavities in the renal substance. (Royal Infirmary Museum, Series VII., M 10.)

shows a very good example of enormously enlarged tuberculous kidney, where the increase in bulk was due to infiltration of the parenchyma of the kidney rather than to any great distension of the pelvis or calices. The kidney weighed 28 ounces and contained a large number of irregular-walled cavities lined by greyish-white pultaceous material.) When this is so the swelling is found to be uniform in size when examined from time to time. On the other hand, when the renal swelling is due to obstruction of the urinary tract, giving rise to hydronephrosis or pyonephrosis from time to time, great variation in the size of the kidney may be observed. In about one-fifth of the cases recorded, and in the majority of those operated upon for strumous disease, the tuberculous pyonephrosis was discovered by palpation during life. Increase in the bulk of the kidney, while it must be regarded as an important sign of disease, is one which when present in connexion with the tuberculous lesion usually indicates that the disease has so far advanced as to cause diminution of the lumen of the ureter or other obstruction to the flow of urine. It is important also to ascertain whether or not the swelling is limited to one side; this may be done by palpation and percussion in some cases, while in others the only reliable mode of testing the extent of the disease is by catheterising the ureters. In tuberculous disease the renal swelling may form the centre from which the pain starts and from "the pain may extend down the line of the ureter to the bladder and testicle, across the abdomen to the opposite kidney, to the spine, down the groin, or along the outside of the thigh.

It is to the diagnosis of tuberculosis in the early stage that we must especially direct attention, seeing that in its later development the aid of the surgeon is of little avail. The urine furnishes important information, and in all cases of suspected tuberculous disease careful analysis and microscopical examination of it should be made previously to the employment of any instrumental examination. One of the

first indications of a tuberculous lesion in the kidney is polyuria, due, probably, to hyperæmia of the organs produced by the presence of tubercle bacilli or their toxins. It is a symptom which is very apt to be overlooked, unless when associated with albuminuria. The presence or absence of albumin seems to depend upon whether or not the tuberculous lesion freely communicates with the urinary tract. If the disease is located in the kidney substance all inflammatory products are kept shut off and do not mix with the excretion. At the same time the portion of the kidney not implicated in the disease continues to excrete healthy urine. If, however, there is a free communication between the active diseased area and the urinary tract, serum, blood-corpuscles, and leucocytes escape and give the urine an albuminous reaction.

Hæmaturia is seldom profuse, but it may occur as a premonitory symptom long antecedent to the development of a gross renal lesion. It is by no means uncommon to meet with cases of profuse and frequent hæmoptyses long prior to the development of any recognisable physical signs of pulmonary phthisis; so also in renal tuberculosis hæmaturia may be present as a premonitory symptom of the disease. Those who have had much experience in the post-mortem room must have seen cases of chronic phthisis pulmonalis where shortly before death hæmorrhages have occurred and blood has escaped into the parenchyma of one kidney or into the pelvis and where on minute examination the renal tissue or even the effused blood was found to be occupied by tubercle bacilli, yet on microscopical examination the histological structure of the kidney was little altered and beyond the blood infiltration presented the same microscopical appearance as its fellow on the opposite side. In such cases numerous tubercle bacilli may be found in the thrombosed vessels of the Malpighian tufts without any inflammatory changes having taken place.

But while hæmoptysis hes been looked upon as a valuable danger-signal of phthisis pulmonalis, even when unaccompanied by other physical signs, hæmaturia has not been regarded in the same light, although doubtless in some instances it carried with it the same warning of trouble to come. Hæmaturia is often the first indication of danger that induces the patient to seek advice, and in many instances unless repeated and most minute examinations are made the medical adviser may find it difficult to arrive at a satisfactory explanation of the symptom. In tuberculous disease the urine presents very marked variations in the different stages of the malady; in the initial phases of the affection the presence of the virus induces a congested condition of the organ, and hæmorrhages occur which are analogous to the early hæmoptysis of pulmonary tuberculosis and are probably due to a local interference with the circulation arising directly from the intimate relationship of the tuberculous deposit with the vascular supply.

CASE 6. *Profuse hæmaturia with slight pain in the left kidney recurring thrice; no other deposit in the urine and no swelling in the lumbar region; apparent recovery for two years followed by a relapse of the symptoms and a swelling in the left lumbar region; muco-purulent deposit in the urine and tubercle bacilli; no vesical irritation.*—A young woman, aged 18 years, consulted me in September, 1893, on account of a profuse hæmaturia which had occurred a fortnight previously. No reason could be assigned for the onset of the bleeding, and it was unaccompanied by any pain over and above a sense of fulness and weight in the left renal region. A careful examination of the urine failed to reveal any abnormal constituents beyond a small trace of blood, but the hæmaturia had practically disappeared at the time I saw the patient. Three months after this first hæmorrhage a second attack, not so profuse or so prolonged as the first, occurred and two months thereafter a third attack, all without any concomitant symptoms. On account of the difficulty in forming a diagnosis an examination of the bladder was made during the last attack and blood was seen issuing from the left ureter in a distinct cloud. It was therefore evident that the hæmorrhage was of renal origin, but as there were no symptoms pointing to the nature of the malady complete rest in bed was enjoined and the patient made what was regarded at the time as a complete recovery. Two years after the first hæmorrhage a fourth hæmorrhage occurred; this was associated with considerable pain in the left lumbar region and a distinct swelling could be made out by palpation. Examination of the urine two weeks after the hæmorrhage occurred showed it to contain a deposit of muco-purulent material as well as blood corpuscles, and on microscopical examination tubercle bacilli were discovered. Still, there were no symptoms present indicating any irritation of the bladder. The temperature was now elevated for the first time and the patient suffered from night-sweats, but there was no emaciation, loss of appetite, or serious constitutional disturbance.

CASE 7. *Hæmaturia 13 years previously to admission, and again nine years after the first bleeding; large tuberculous pyonephrosis.*—A man, aged 39 years, was admitted to the Glasgow Royal Infirmary on April 28th, 1896, complaining of pain in the region of the right kidney. The patient's first trouble in connexion with the urine dated back 13 years, when he had a slight attack of hæmaturia accompanied by pain over the right kidney, but these symptoms passed off in a few days. The patient had been in the infirmary in February, 1892, suffering from hæmaturia. He first noticed blood regularly present in his urine in November, 1895. He, however, was able to continue at work until the end of January, 1896, when he came into the hospital. At that time the hæmaturia was very considerable. He said that it was only three weeks previously to admission that he noticed anything like severe pain in the right side, and since the pain came on he had not noticed any blood in the urine. On examination a very distinct fulness was found in the right lumbar region. The whole space between the liver and the crest of the ilium was dull on percussion, and on pressure considerable tenderness was produced. The thoracic organs and the other abdominal organs were normal, so also was the bladder. The urine contained a considerable quantity of pus and some blood, and tubercle bacilli were present. The left kidney was healthy. On operation a large tuberculous kidney was discovered on the right side; it was scraped and evacuated.

In early hæmaturia the urine contains blood, but is free from tuberculous deposits such as can be recognised by the naked eye or even by the microscope. Cultivation observations and inoculation experiments may, however, detect the presence of tubercle bacilli.

Late hæmaturia from destructive tuberculous processes in the pelvis and renal parenchyma.—When the kidney parenchyma and the calices become more seriously involved the characteristics of the urine are more distinct, but this is not always the case. The physical characters of the urine are in some instances such that one can with certainty state that the urinary tract is the seat of a tuberculous lesion, while in other cases the excretion may be to no appreciable extent altered from the normal. Before destructive processes commence within the renal pelvis or substance traces of albumin and small quantities of blood may be detected, but when the tuberculous deposit has commenced to break down and to evacuate into the ureter the quantity of albumin is increased, the urine is liable after a time to become alkaline, and along with greater or less quantities of débris of renal tissue pus appears in considerable quantity. The albuminuria differs from that of Bright's disease in that the urine is not clear, but contains much mucus; it is viscid, cloudy, and opaque, and it does not contain tube-casts. The deposit contains small caseous masses mixed with renal débris, and on standing, although a considerable amount of pus may be precipitated, a certain quantity remains suspended and imparts a cloudy appearance to the fluid.

It is only in rare instances that profuse hæmaturia occurs in renal tuberculosis. Trautenroth[1] records a case of a woman, aged 24 years, who was the subject of pulmonary tuberculosis in its early stage but who also suffered from profuse hæmorrhage from a tuberculous kidney which necessitated nephrectomy. The pelvis of the kidney was filled with coagulated blood and upon one of the papillæ a considerable ulcer was discovered. The parenchyma of the kidney was the seat of a diffuse tuberculosis. The urine before the operation was found to contain tubercle bacilli. The patient made a good recovery. Routier[2] records a somewhat similar case where the right kidney was the seat of a large tuberculous ulceration. Severe hæmorrhage occurred and continued during 17 days associated with renal colic. On making pressure over the right kidney blood was seen to escape from the right ureter by the cystoscope. The kidney was removed and the patient made a good recovery.

CASE 8. *Occasional slight hæmaturia followed by one profuse bleeding in advanced renal phthisis.*—The only case

[1] Centralblatt für Chirurgie, 1896. No. 16.

[2] Bulletin et Mémoire de la Société de Chirurgie de Paris, vol. xxi., p. 148.

worthy of note where severe hæmaturia occurred in advanced tuberculous disease was that of a man, aged 37 years, who was admitted to the Glasgow Royal Infirmary on June 16th, 1895. The patient was under treatment for a long period for tuberculous disease of the right kidney, and whilst occasional slight hæmaturia was observed from time to time it was not until March, 1897, that a large amount of blood escaped and at that time a very considerable hæmorrhage, amounting as the patient thought "to about a pint of blood and blood-clot," escaped, but as far as is known no recurrence of bleeding of such dimensions occurred. Although tuberculous bacilli are classified as non-pyogenic, and properly so, in many cases of tuberculous disease before mixed infection has occurred large numbers of leucocytes not distinguishable by the microscope from pus may be found. In pure tuberculous disease the urine is acid and sterile from pyogenic microbes. For diagnostic purposes it is therefore necessary to draw off through a sterilised catheter a quantity of urine and to make cultures. The presence of pyogenic micro-organisms does not exclude the possibility of the disease being tuberculous, but their absence greatly strengthens the presumption.

As the disease advances the odour of the urine as a rule becomes more and more offensive; the fluid deposits large quantities of mucus and triple phosphates and on examination it is found to be highly albuminous. Occasionally while the urine is pale and of low specific gravity there may be evidence of retention on the diseased side, as shown by increase in the renal swelling, with perhaps indistinct fluctuation and pain, accompanied by general constitutional disturbance, or there may be complete suppression, death being ushered in by uræmic symptoms.

In addition to the diagnostic points already indicated the detection of the tubercle bacillus in the urinary débris is of great value. It is when tuberculous lesions begin to break down that tubercle bacilli are most abundant, and sometimes their number is very large. Several examinations are required before it can be concluded from negative results that the case is not tuberculous. It is more difficult to obtain the bacilli from urine than from sputum; they are less numerous in proportion to the medium in which they lie. decomposition destroys them more rapidly, and smegma bacilli are apt to be mistaken for them. The method is as follows. Allow a quantity of urine to stand in a conical glass in a cold place for not more than six hours and from the deposit select a small quantity of débris and place it in a glass of ¾ per cent. salt solution. It is more rapid and more reliable, however, to obtain separation of bacilli by the employment of the centrifuge. This method should always be resorted to when the numbers are small or when the urine contains much mucus or blood. When large quantities of mucus are present it may be necessary to render the urine slightly alkaline before using the centrifuge. Having placed a small fragment of the débris on a clean cover-glass it should be spread out into a thin layer by pressing another cover-glass against it between the finger and thumb. On separating the cover-glasses a thin film of débris will be found adhering to each. The glasses must be air-dried, and then the films may be more firmly fixed by drying over a spirit-lamp or in front of a fire. The cover-glasses are then placed in or, still better, floated upon (with the film side downwards) a solution of aniline magenta or a staining fluid of gentian violet. When the film has become sufficiently stained the colour may be abstracted from all structures other than the tubercle bacilli by passing the cover-glass through a 25 per cent. solution of nitric acid. The action of the acid may be arrested by carefully washing the specimen in pure water. When examining the urinary débris for tubercle bacilli it is necessary in most cases to prepare at least half a dozen specimens. Should bacilli be present they will be recognised by a magnifying power of 750 diameters as minute rod-shaped bodies, coloured according to the nature of the staining fluid employed. They are from three to seven micro-millimetres long; they may be straight, but are more frequently curved or bent upon themselves at an obtuse angle; they are frequently beaded and they occur in bundles or singly. From the urine the micro-organisms are not easily cultivated, as putrefactive bacteria contaminate the culture and destroy the specific bacilli. Koch, however, states that he has succeeded in cultivating tubercle bacilli from cases of tuberculous pyelitis. In some instances the bacilli in the urine are so few in number that it is difficult or almost impossible to discover them simply by the microscope; in such instances inoculation experiments may help to clear up the diagnosis. Tuberculosis can be communicated artificially to animals in many different ways—in fact, through any of the channels of access to the body: by inhalation, by feeding animals on tuberculous products, or by injection into the serous cavities beneath the skin, or into the anterior chamber of the eye, or into veins. When tuberculous urine is injected subcutaneously into guinea-pigs or into rabbits it produces a typical tuberculosis within 10 or 12 days. The local swelling may break down, caseate, and ulcerate, while the lymphatic glands related to the part become enlarged and firm, and after a time may also caseate and the disease passes on to another group. When injected into the peritoneal cavity tuberculous urine produces an extensive tuberculous infiltration of the omentum and acute tuberculous peritonitis. Normal urine when aseptic becomes absorbed without producing any evil effect or when septic it may produce a suppurative peritonitis. If, however, the experiment is performed with care healthy urine produces a negative result, but if the urine contains tubercle bacilli or their spores acute miliary tuberculosis is developed in the course of a few weeks when the injection is made into the peritoneum, or if the urine is placed underneath the skin a hard tuberculous nodule is formed.

Besides the detection of the tubercle bacillus it is necessary to determine whether the disease is on one or on both sides. I have several times had occasion to examine by ureteral catheterisation cases of tuberculous pyelitis in which it was considered of importance to determine the extent to which the disease had involved one or both kidneys. Catheterisation can only determine the organ to which the tuberculous disease is limited; it cannot indicate the extent of the tuberculous lesion in the affected organ, but to make sure that one kidney is free from disease is a point of importance. The first time I succeeded in doing this was in 1886, when a case was examined and it was clearly shown that the tuberculous lesion was limited to one kidney.

Diagnosis.—The diagnosis of tuberculous disease from other renal lesions is generally easy, but in some instances it is extremely difficult. The most important features which distinguish the disease have already been referred to, so that little requires to be added. The diseases with which tuberculous lesions are most likely to be confounded are renal tumours, septic pyelitis, and pyonephrosis, and changes in the kidney consequent upon the presence of a calculus. In calculous pyelitis the purulent stage is slowly developed and is usually preceded by occasional attacks of slight hæmaturia. Indeed, in many cases of renal calculus the appearance of blood in the urine is the first circumstance which attracts the attention and alarms the patient. In calculus the urine passes through a stage during which there is an increase in the quantity of mucus, and this stage is succeeded by the appearance of pus, the quantity of which slowly increases. While these changes are taking place, even through a protracted period, it is remarkable how well the general nutrition of the body is maintained. In tuberculous disease, on the other hand, the purulent stage often develops early; the pus is constantly present, but is not generally in large amount. The pyuria is accompanied from the beginning by a degree of emaciation, by a careworn expression, by evening exacerbations of fever, and by rigors, by drenching night-sweats, and an interference with appetite seldom witnessed in calculous pyelitis.

Tuberculous disease is readily distinguished from malignant tumours of the kidney or renal pelvis by the circumstance that in these diseases the urine seldom contains much pus or débris, and if abnormal at all it is from the presence of blood, which when it once appears continues and may be found in large quantities.

The extension of the inflammatory process to the ureter, bladder, and lower urinary tract is strong if not unequivocal evidence of its tuberculous nature. In inflammation arising in the course of calculous pyelitis or pyonephrosis the conducting and collecting portions of the urinary system are seldom seriously implicated, whereas in strumous disease not only are those structures involved, but by a process of infection the generative organs may become invaded also—in the male the vesiculæ seminales, the vas deferens, the epididymis, or the testicle, and in the female the vagina and the ovaries. An examination, therefore, of these parts may assist the diagnosis in doubtful cases.

The diagnosis of the various stages of tuberculous disease is also especially important when operative interference is

contemplated. In miliary renal tuberculosis secondary to lesions in other organs there may be only slight disturbance of function, the secondary urinary troubles being marked by the symptoms of the primary lesions. Sometimes, however, incontinence of urine may demand attention and on examination the condition of the urinary organs may be ascertained.

In chronic nephritis and in tuberculous pyelitis the symptoms are generally well marked and differ materially according to the course of events as regulated by the channel along which infection has taken place. As already indicated, in the descending variety the kidney parenchyma is first involved, and the renal trouble, although it may be primary, is generally secondary to some easily recognised tuberculous lesion elsewhere. There is not usually much increase in the size of the organ to begin with, but sooner or later the lower urinary tract becomes involved in a way and with a degree of certainty not seen in other inflammatory diseases. When a mixed infection has taken place and tuberculous abscesses have formed and ruptured into the pelvis pyuria becomes constant, except when the flow from the ureter is retarded by an obstruction, which, however, is usually temporary. At times, therefore, the urine may be almost clear, while at others it is loaded with pus and tuberculous débris. In the ascending form of tuberculous disease vesical symptoms appear early in the course of the disease and are often associated with evidence of tuberculous lesions in the prostate, &c. The ureter becomes involved before the kidney, hence symptoms arising from obstruction, such as renal colic, transitory pyonephrosis, or increase in the size of the kidney from the dilatation of its pelvis, are observed early in the course of the disease.

(To be continued.)

ON THE RELATION OF BLOOD TO LYMPHATIC VESSELS.

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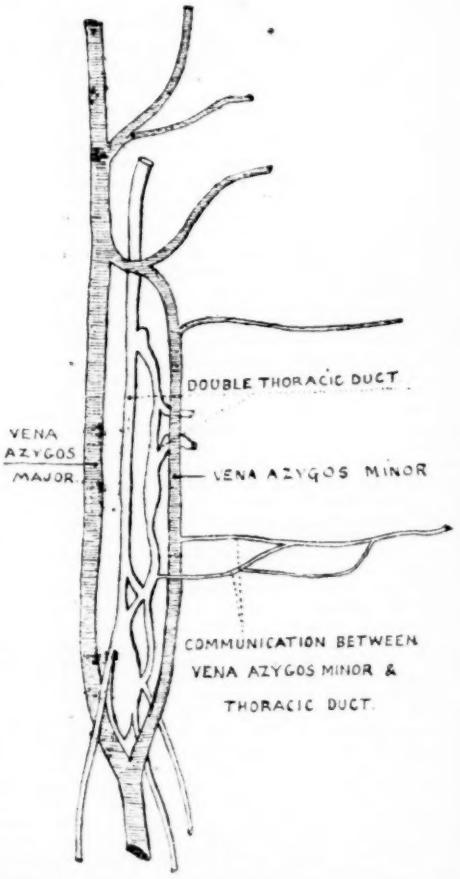
IN THE LANCET of June 18th, 1898 (p. 1680), in an article entitled "A Method of Injecting the Lymphatic Vessels," I described a communication which I had observed in the inguinal region of the human subject between a lymphatic vessel on the one hand and a vein on the other. Since that time I have made dissections in the thoracic region in three subjects to determine whether this communication was at all constant and in all these instances have I found it to exist. The following illustrations are drawn from dissections made in these subjects which were hardened by formalin. In Fig. 1 the thoracic duct is double. One of the lower left intercostal veins is seen to terminate not only into the vena azygos minor, but to be connected by a small communicating branch with the left half of the double thoracic duct. In Fig. 4 a large lymphatic trunk is found to terminate directly into the vena azygos major and in the same figure an intercostal lymphatic vessel is seen to terminate in the lowest intercostal vein of the right side. These and other directions show that in the thorax the communication between these two sets of vessels is of no uncommon occurrence and I am inclined to regard it as a normal one. It is frequently found that some of the intercostal lymphatics pour their contents into some of the intercostal veins or into one or both of the azygos veins or that some large lymphatic trunks in the neighbourhood of the receptaculum chyli empty into the vena azygos major. Lippi of Florence in 1825 was the first to maintain that communications between the lymphatic vessels on the one hand and the portal, internal jugular, renal, inferior cava, and azygos veins on the other hand actually existed, but these conclusions were not generally accepted. Recent work would tend, however, to confirm Lippi's contentions. Thus MacAlister[1] says: "The chief communications of lymphatics with veins are at the junctions of the jugular and subclavian veins on each side, but a few communications of smaller size occur elsewhere, as into the internal iliac and posterior tibial veins."

[1] A Text-book of Human Anatomy, p. 89.

Richard Boddaert[2] experimented on the rabbit, and after ligaturing the thoracic duct and then feeding the animal on a sufficient quantity of fat introduced into the stomach for four hours before its death found that in nearly a third of his experiments (five out of 16) there was a communication between the lymph vessels and the azygos veins. He found, moreover, that by applying forceps near the junction of the azygos vein and the right vena cava superior, and exercising pressure on the lumbar lymphatic vessels, with each pressure the azygos vein became distended, while its contents owing to the admixture of lymph then became much paler. Conversely by pressing on the azygos veins the vessels of communication became distended and their contents from

FIG. 1.



being milky became red. Boddaert has also noticed a large lymphatic trunk pass directly into the external iliac vein. It is always taken for granted that the flow of lymph is from the lymphatic vessel into the vein, and in the great majority of cases, of course, this is the case, but whether it is invariably so along some of these communicating vessels I think there is good reason to doubt. In Fig. 1, for instance, the blood is obviously passing from the intercostal vein into the vena azygos minor, and from the direction of the communicating vessel probably through this into the left half of the thoracic duct, or, in other words, it would seem, judging by the direction and relative sizes of the vessels, as though the thoracic duct was here receiving a small venous tributary. In the superior mediastinum I have seen small veins coming from the thyroid gland empty themselves directly into the large lymphatic

[2] Etude sur une Communication exceptionnelle entre le canal thoracique et la veine azygos chez le lapin. Extrait des Annales de la Société de Médicine de Gand.

trunks in this region. By some of the smaller veins emptying themselves into the larger lymphatic trunks it would seem that the somewhat sluggish movements of the lymph current would be thereby quickened. Not only are the veins but also small arteries in the thorax brought more immediately into relation with lymphatic vessels than hitherto supposed.

In the specimen from which Fig. 3 was drawn the lymphatic vessels were well marked and at one point, X, I traced from one of them a vessel which at first I took to be a vein. On tracing it further, however, it was proved to be a branch of an intercostal artery. As far as could be seen with the aid of a strong magnifying glass this vessel passed directly at the point X into the lymphatic vessel. In the

FIG. 2.

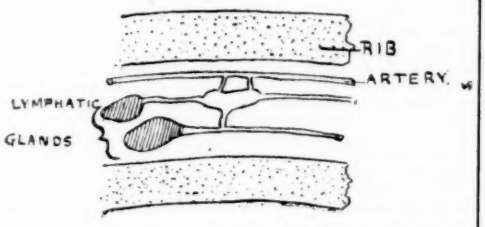
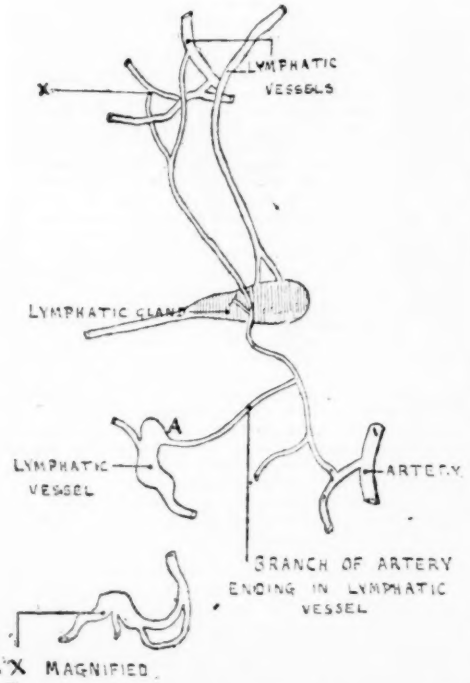


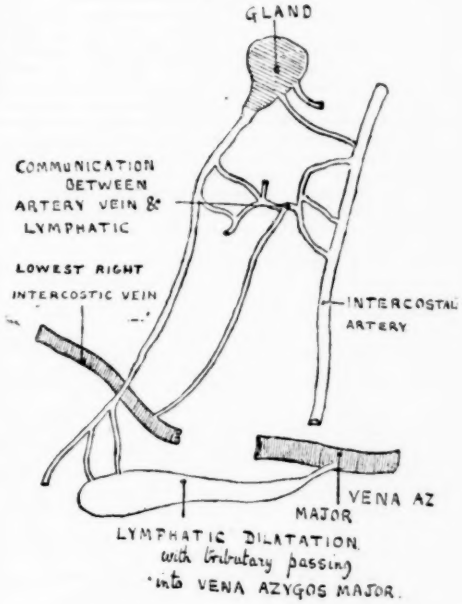
diagram the other terminal branch of the same artery also appeared to end in a lymphatic, but though represented as doing so in the diagram I could not be absolutely certain on the point; however, another branch of the same artery could be easily seen with a magnifying lens to end in a vessel which from the translucency and beaded appearance was obviously lymphatic. Again, in Fig. 2 an intercostal artery is seen to give off two small parallel branches

FIG. 3.



which end in a dilatation into which a lymphatic vessel passes in at one extremity and emerges at the other; from this dilatation a short branch passes to another lymphatic vessel. In Fig. 4, again, one of the lower intercostal arteries on the right side is seen to give off three branches which unite together and form a loop from the convexity of which a branch passes off which communicates directly with a lymphatic vessel; from this branch, again, another vessel passes off which terminates in the lowest right intercostal vein; in this case there is a direct communication between

FIG. 4.


GLAND
COMMUNICATION BETWEEN ARTERY VEIN & LYMPHATIC
LOWEST RIGHT INTERCOSTIC VEIN
INTERCOSTAL ARTERY
VENA AZ MAJOR
LYMPHATIC DILATATION with tributary passing into VENA AZYGOS MAJOR.

an artery and a lymphatic vessel and an indirect one with the lowest right intercostal vein.

It has been known for some time that the lymph often assumes a pink or reddish hue, and the colour has been shown[3] to be due to the presence of red blood corpuscles. How do the corpuscles pass into the lymphatic vessels? If the fact already mentioned is admitted—viz., that a certain number of small arteries pour their contents directly into lymphatic vessels—the presence of these corpuscles is readily explained, and another factor is present which would materially quicken the movements of the lymph; however, it is only right to add that the arteries apparently do not communicate directly with the lymphatics nearly so frequently as do the veins.

If the communications between the veins and lymphatics can be shown beyond a doubt to take place all over the body—and already they have been observed to exist to a very considerable extent—it follows that we ought to regard the venous system as a part, and that no inconsiderable part, of the absorbent system. We shall then have a ready explanation of certain facts usually regarded as peculiarities in connexion with dissemination of the sarcomata and the carcinomata. It is known that the former usually spread by the veins but sometimes involve the lymphatic glands. The latter invade the lymphatic glands and where secondary deposits are found in the liver, for instance, after carcinoma of the rectum the veins and not the lymphatics are probably the channels through which the cells have passed to reach the liver. It is a fact also that some of the carcinomata, though affecting the lymphatic glands to a slight extent only, yet disseminate rapidly; in such cases it seems hard to believe that the cells have had to traverse innumerable chains of lymphatic glands which, as all admit, act as most efficient barriers before they could pass into the general circulation. A more ready explanation, I would suggest, and one in accord with the facts, would be that the cells had taken, as it were, a short cut into the circulation

[3] Cyclopædia of Anatomy and Physiology: Lymphatic System by S. Lane, vol. iii., p. 230.

either by passing along these communicating vessels into the veins or else had passed into the veins by means of the direct continuity which Frohmann pointed out exists between them and the lymphatic vessels in the substance of the lymphatic gland itself.

In conclusion, then, I would urge the following considerations. 1. The azygos veins normally receive a great many lymphatic vessels. 2. Some of the smaller arteries in the thoracic region open directly into lymphatic vessels; some of the smaller veins open directly into the large lymphatic trunks; and these two factors help to quicken the movements of the lymph. 3. Direct communications are found to exist between arteries, lymphatic vessels, and veins. 4. The communications between veins and lymphatic vessels have been observed to take place in a great many regions in the body. 5. Owing to the presence of these communications the cells of a malignant growth can pass either from the lymphatics into the veins or *vice versâ*, and hence not only in the sarcomata but also in the carcinomata the veins, as well as the lymphatics, should always be regarded as channels along which the cells may at any moment be conveyed to distant parts of the body.

Wimpole-street, W.

A CONTRIBUTION TO THE SURGERY OF THE KIDNEY.

BY LEONARD W. BICKLE, F.R.C.S. EDIN.,
HONORARY SURGEON TO THE ADELAIDE HOSPITAL, SOUTH AUSTRALIA.

THE interest in Case 1 is of a twofold character. First, as another instance of the toleration of the pregnant uterus to abdominal section; and secondly, the smoothness of the case for the first week and then the febrile disturbance due to the recurrence of a dermatitis to which the patient was subject. The dermatitis in this attack was evidently due to the altered excretory conditions, as dermatitis and temperature alike fell when the urine from the remaining kidney reached a normal amount.

CASE 1. *Nephrectomy during the third month of pregnancy; recovery; subsequent normal delivery of a healthy infant at term.*—The patient, a married woman, aged 29 years, the mother of four children, was admitted into Adelaide Hospital on March 7th, 1898, complaining of pain and swelling in the left side of two years' duration, which commenced with aching pain in the left side and the lower part of the back. A lump was first noticed about three months previously; the pain had increased much and was of a throbbing, burning character, but was not present every day. At times she passed a very large quantity of urine and then the lump or swelling got larger (?). The patient's father had died in hospital from "swollen knee" and her mother had died from "dropsy" after confinement. The patient had been married 11 years and had had four children. She had had one miscarriage two and a half years previously at about the sixth week. She had lost flesh of late. Her appetite was fairly good but she was unable to take food. Resonance and fremitus were normal. The breath-sounds were harsh and dry. The heart was normal and the arteries were healthy. The skin of the abdomen was flaccid, the lineæ albicantes were well-marked. On the left side a tumour which varied in size was to be felt. The patient had dragging pains when she tried to lie on the right side, but none when lying on the left side. The tumour was not to be differentiated from the left lobe of the liver. It was situated under the left costal arch, and though it was not moveable yet it came down with respiration. It measured about four and a half inches vertically and four inches transversely, it was not painful to touch, and was apparently cystic in character. The urine was of specific gravity 1020; it was clear, acid, and contained no sugar or albumin. The skin was very harsh and dry and was usually so, especially in winter. On March 14th the patient complained of much pain. On the 15th the urine was turbid and contained a small amount of pus and albumin. The urine had been measured daily so far, but had not varied much in amount. On the 17th a consultation was held; further observation was advised before operating. On the 27th the tumour had increased in size and could be pushed into the loin; the patient's distress was greater. On the 29th, in view of the increasing size of the tumour and pain and the probability of the patient being pregnant, in further consultation a laparotomy was agreed upon and carried out forthwith. Chloroform was given by Dr. Kinmont. I started my incision from the costal arch at the linea semilunaris and continued it somewhat down and out for two and a half inches. On the abdomen being opened the cyst was found to be retro-peritoneal. The incision was extended about one inch. The posterior layer of the peritoneum was cut through and the cyst was exposed. The cyst was tapped and a small amount of clear fluid with a faint urinous smell was drawn off. Whilst this was being tested the cyst suddenly ruptured. The fact that the cyst contained no mother or daughter cyst negatived a possible origin—viz., hydatid of the kidney. The thin walls of the cyst and the ready rupturing showed what would have happened later if the tumour had been left and the pregnancy had progressed. Having thus a hydronephrosis to deal with it was decided to remove the cyst and kidney rather than to leave a permanent urinary fistula. Accordingly the kidney was brought out and the pedicle was transfixed with a blunt needle and tied with a Staffordshire knot. The vessels and the ureter were re-tied on the face of the stump. No other vessels required tying during the whole operation. The abdomen was then flushed out with boric solution and the wound was closed with silkworm-gut sutures, a glass drainage-tube with a rubber drain being left in the lower part. The upper part of the wound was sealed with Whitehead's paint. The temperature after the operation was 96·8° F. The afternoon temperature of reaction was 101°. There was no sickness for over 12 hours. A small amount of fluid was drawn off. On the 30th sickness and flatulence were a little troublesome and the temperature was 99·2°. The drainage-tube was removed and the stitch which had been left loose was tied. Three grains of subchloride of mercury were given and one ounce of haustus albus in the morning. The urine measured 8 + 6 ounces. On the 31st there was less sickness. The urine measured 8 + 9 ounces = 17 ounces. On April 4th the patient's condition was good, all going well. The wound when dressed was found to be quite healed. On the 7th the patient was not quite so well, complaining of pain in the left side; the temperature was 100°. On the 8th her general condition was about the same; there was some exudation about the stump. On the 10th she was better; her skin was harsh and dry, and there was some dermatitis. On the 12th she had pains in nearly all of her joints and the dermatitis was very troublesome, preventing sleep. The temperature was 98·4° in the morning and 100·4 in the evening. Sodium salicylate and sodium bicarbonate were given. On the 16th the temperature was 98·4° in the morning and 103° in the evening. On the 18th the temperature was 99° in the morning and 102·4° in the evening; there was much irritation; the urine measured 21 ounces. The patient was sleepless. It was probable that the whole irritation and trouble were due to want of compensation by the right kidney. One-twentieth of a grain of pilocarpine was given every four hours. On the 19th the temperature was 98° in the morning and 100·6° in the evening. On the 20th the urine measured 43 ounces; the dermatitis was almost gone. The cicatrix was firm and sound. The temperature was 98·4° in the morning and 99·4° in the evening. The uterine enlargement steadily increased. There was no further trouble.

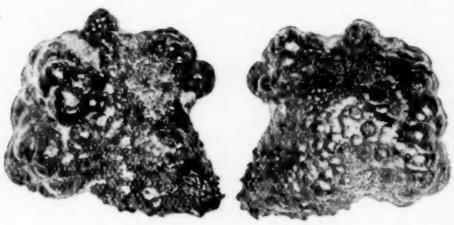
In due course the patient was delivered of a healthy child, the labour being normal in every way. She came to see me some weeks later to show her child who was the picture of health. There was no vestige of ventral hernia. In August, 1899, I heard that the patient was quite well.

CASE 2. *Nephro-lithotomy.*—The patient was a man, 56 years of age, who first consulted me in September, 1891, complaining of pain in his left side of over 12 years duration. In the earliest onset once or twice he had passed blood in his urine, but none since. The pain was aggravated by exertion and at times it was severe. He also complained of localised sweating. This was curiously marked. The under vest would be quite wet for an inch or two in width round the zone of this pain which was that of the left renal region. The sweating was a great source of discomfort. I have noticed the same localised sweating since then in kidney cases. The urine was clear and pale, giving just a faint ring of albumin with cold nitric acid. Microscopically a few blood corpuscles, leucocytes, and crystals of oxalate of lime were seen. The diagnosis arrived

at was stone of the oxalate variety in the left kidney. The patient was very loth to accept the diagnosis as he had consulted several other medical men who had not suggested it. He was a very bad subject for surgical interference, and as he refused to hear of it a temporising policy was pursued. Belladonna locally and lithia citrate internally with an occasional opiate at night until the end of the year rendered life tolerable during 1892 and 1893. He always had the dragging pain, but, as he expressed himself, it was bearable; occasionally he came to see me. In October, 1894, he had profuse hæmaturia so free that the question of cutting down on to the kidney was discussed. By rest and astringents it abated. The hæmaturia clinched the diagnosis. After this he was occasionally worse and better, still preferring to temporise, although told that an operation was the only course. In August, 1896, he came saying that life was unendurable. He was directed to go home and to bed, and two days later, with the kind assistance of Mr. J. C. Weld and Mr. C. D. G. Morier, I cut down on the kidney by the usual lumbar incision. No stone could be felt by the finger, but after the systematic use of the searcher a stone was struck, the kidney was incised, and with some difficulty the large stone here figured was removed. The hæmorrhage was very profuse, so the wound was closely packed and the patient was made comfortable. A few days after the operation a small nucleus of oxalate was passed. Convalescence was a little retarded by some infiltration of urine into the tissue of the back, necessitating free incisions. From the tenth to the seventeenth day after the operation his mental condition was very serious (an afebrile delirium), but after the seventeenth day he recovered rapidly. On the twenty-seventh day urine ceased to come from the wound; he had then been up in a chair for some few days.

His recovery has been complete and from being a man prematurely aged, of slow, bent gait, and generally depressed condition he is now (three years after the operation) a fairly brisk, cheerful man to whom life has ceased to be a burden.

The accompanying illustrations give a good idea of the



Two aspects of the stone.

stone and of its actual size. It was clearly an oxalate with some deposit of phosphates; it weighed rather over 240 grains. It is not a little remarkable that so large a stone should only have produced one serious attack of hæmaturia, that attack occurring two years before the removal.

Adelaide.

HALLUX VALGUS AND HALLUX VARUS.[1]

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Definition of terms.—The fact that in Latin the terms "valgus" and "varus" were used inversely to the manner in which we use them need hardly be made the subject of discussion, since their misuse has become so well established that their meaning is never in doubt. When it is desired to express accurately the nature of the deformity some careful consideration of the meaning of words is desirable. In different languages the terms "abduction" and "adduction" as applied to the great toe are used in opposite ways: thus Hoffa defines hallux valgus as an "Abductionstellung" of the great toe. Redard terms it "outward deviation" of the great toe, but uses the terms "adduction" and "abduction" in the same sense as Hoffa—that is, conversely to their employment by English anatomists. Perhaps it will be simpler to follow the continental fashion in this matter and make the meaning of the term "abduction" clear by adding the qualifying phrase "from the median sagittal plane of the body." There is in hallux valgus something more than this and I should be inclined to suggest as the complete definition the following:—Hallux valgus is a deformity in which the great toe, when the foot is at rest, assumes a position of abduction from the mesial sagittal plane of the body and at the same time is, to a greater or less extent, subluxated outwards, it being understood that normally the great toe lies in the same plane as the first metatarsal bone. Hallux varus is the condition converse to hallux valgus.

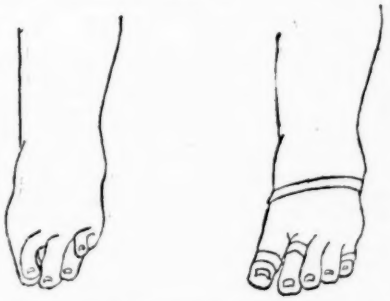
Anatomy.—The internal lateral ligament is elongated, sometimes thicker, sometimes thinner, than normal. With the outward displacement of the base of the first phalanx there is a corresponding outward displacement of the sesamoid bones and the flexor, extensor, and other tendons. The cartilage of the inner part of the head of the first metatarsal bone tends to undergo fibrous metaplasia, and an adventitious bursa to form between the internal lateral ligament and the skin over the exposed inner part of the head of the metatarsal bone. In persons suffering from rheumatoid arthritis or gout the anatomical changes of these conditions, separately or combined, are present. In rheumatoid arthritis there is, I believe, constantly a groove denuded of cartilage and lined by rarified bone; the groove is caused by the pressure of the inner margin of the base of the first phalanx. Extensive villous overgrowth of the synovial membrane may be present in the same class of case, and I have also observed both in operating and in making post-mortem dissections that in rheumatoid cases the internal lateral ligament is usually thin and often allows the adventitious bursa to communicate with the joint cavity. The changes in the heads of the metatarsal bones as seen in a case which I have previously reported to the British Orthopædic Society are shown in Fig. 1.

FIG. 1.

The anterior surfaces of the heads of the metatarsal bones removed for hallux valgus in a case of rheumatoid arthritis.

Causation.—Congenital hallux valgus, though far less common than acquired, is met with from time to time. I can recall three instances that have come to my notice in the past three years. One was that of an infant a

FIG. 2.



The left foot of an infant with congenital hallux valgus, &c., and (to the right) the same foot with the deformities corrected by strips of adhesive plaster.

few days old. In this case there were about 40 degrees of hallux valgus, the second toe was displaced upwards above the great toe, and the little toe was displaced inwards upon the dorsum of the foot, as shown in Fig. 2. The toes were

[1] Introduction to a discussion at the meeting of the British Orthopædic Society held on Feb. 17th, 1900.

readily replaced and retained in their normal positions by strips of strapping. The second case in which the deformity was said to have been present at birth came to my notice when the patient was 14 years of age. The second toe was a hammer-toe of the common type and the little toe was deformed in the same way as in the first case. The third case was admitted into the City Orthopædic Hospital under the care of Mr. Poland, who operated, and who, I hope, will record the nature and result of his operations. I have no doubt that these cases are of mechanical origin and, like congenital club-foot, are due to accidental cramping in utero.

ACQUIRED HALLUX VALGUS.

Much has been written about this very common deformity and various categories of causes have been adduced. Thus, according to Redard, we have the following theories:—1. The muscular theory—e.g., Nélaton attributes it to contraction of the extensor proprius hallucis; Duchenne to paralysis of the adductor (*Anglice*, abductor) hallucis; and Dubreuil to predominance of the abductors over the adductors. 2. The ligamentous theory. According to Malgaigne the deformity should be regarded as the effect of softening of the internal lateral ligament of the joint. 3. The mechanical theory. Broca appears to have been the first to recognise the part played by badly shaped boots and shoes in the causation of hallux valgus; I believe that tight socks will sometimes occasion the condition in young children. Redard on this head observes: "I admit that boot pressure, though not an efficient, is an occasional cause. How, in fact, can we explain the occurrence of hallux valgus in persons who have never worn boots or at any rate tight ones?" 4. The osteo-articular theory. Verneuil counts everyone who has hallux valgus to belong *ipso facto* to the arthritic class. He found that 50 per cent. of the patients had rheumatoid arthritis. My own investigations which were made when I was pathologist at St. Mary's Hospital upon some hundreds of such joints would give a still larger percentage. On closer examination these theories resolve themselves into a simpler statement. Paralysis of the adductor (*Anglice*, abductor) hallucis apart from that of the other muscles I have not observed, but it may occur and would give rise to hallux valgus. Of the remaining theories the second becomes part of the fourth, for softening of ligaments apart from traumatism or extension of inflammation from the superficial tissues is only seen in some bone and joint affections. Thus the case may, I would submit, be stated thus:—Hallux valgus acquisitus is usually due to certain predisposing causes acting together with an exciting cause. The predisposing causes are such as cause weakness of muscles and softening of ligament and bone—e.g., gout, rheumatoid arthritis, traumatism, and rickets. The commonest exciting cause is badly-shaped boots or shoes.

Sex incidence.—Women are more commonly affected than men; probably, I would suggest, because they are more often influenced by stupid fashion in boots and their muscles are less powerful to oppose the deforming effect of boot-pressure.

Symptoms.—Lameness arises when the deformity is pronounced and is due to pain in the first metatarso-phalangeal joint, to the loss of the action of the great toe in walking, and to concomitant deformities. The latter deserve separate notice.

Concomitant deformities.—Ordinary flat-foot and transverse flat-foot with or without metatarsalgia are naturally common because the same predisposing causes contribute to them as to hallux valgus. The outward displacement of the long flexor of the great toe and of the transversus pedis muscle may also help in producing the two forms of flat-foot in cases where the hallux valgus precedes the other deformities in point of time. Some of the concomitant deformities follow the outward wheeling of the great toe as direct results; all four remaining toes may be displaced outwards, their abduction being usually accompanied by some extension of their metatarso-phalangeal and flexion of their interphalangeal joints. This may attain such a degree that they have the characters of hammer-toes. The second toe is most commonly affected to this more severe extent. In severe cases of hallux valgus the second, third, and fourth toes may lie upon the great toe. Less commonly the second and third toes lie beneath the displaced hallux. Davies-Colley has expressed the opinion that many cases of hallux rigidus become converted into hallux valgus. I have not as yet observed this myself.

Treatment.—General treatment is often of the first importance and the aid of the physician is required. Careful regulation of the diet and the use of guaiacum and lithia internally are most frequently called for. The treatment of the surgical accidents—e.g., suppuration—hardly concerns us in the present discussion. Prophylactic treatment includes allowing children to walk with bare feet as much as possible and providing them with roomy socks and properly shaped boots. I need not here go into detail on the latter point, but I may say that I think the rules laid down by von Meyer may always be followed. Gymnastic treatment, active adduction exercises, and Ellis's tip-toe exercise are all useful; passive manipulations, douching, and massage are also of use. As to mechanical treatment, in slight cases bandages made on the plan described by Sayre, together with the foregoing measures, may suffice. I find that many patients can be taught to make efficient bandages of webbing for themselves. The septate boot treatment is an idea which originated with von Meyer and which has been well worked out by G. R. Fowler. The "toe-post" has recently somewhat displaced it in this country. I have tried this latter device in a fair number of cases but save in slight degrees it has proved unsatisfactory. Mr. Luke Freer's instrument, which I think might be termed a "toe lever," certainly promises better things and we shall hope to hear his further experience of it. A simple device ascribed by Hoffa to Mr. Noble Smith consists in surrounding the great toe by a leather band to the inner side of which is attached a string which is passed through an aperture in the inner border of a correctly shaped boot-sole. Beely has so arranged the same device that the aperture in the sole does not communicate with the exterior. Sole-plates, whether of leather or metal, are often of use. Some are designed to be worn inside the boot, the toes being fixed to the plate by tapes. This method amounts to wearing a sandal inside a boot. Where the hallux valgus is complicated by the presence of deformities in other toes this plan is sometimes required, but when the deformity of the great toe is the only condition requiring treatment the sole-plate may, in my opinion, be conveniently dispensed with in favour of a lever as described below. For use at night, especially after operations, a well-made sole-plate with a good heel-piece, ankle- and instep-straps, as well as toe-straps is often to be recommended. This appliance, like all other instruments, should be carefully designed by the surgeon. The familiar "bunion spring" of the late Mr. Heather Bigg, sen., is so well known that I need not here describe it. Springs may also be added to the metal sole-plate. I think that the simpler rigid apparatus is preferable to springs. The mechanical device of the lever is the one I most commonly use. The instrument consists of a thin, flat band of steel shaped to lie under the great toe, to curve outwards to avoid the head of the first metatarsal bone, and to end in a second straight piece which lies under the hollow of the arch of the foot. The fulcrum is a padded metal projection jointed to the front of the hinder straight piece and working on the inner side of the metatarsal bone just behind the head. A strap is attached to the posterior end of the lever to pass in a figure of 8 round the ankle and to be fastened off at the fulcrum. A second strap may be added passing round the forepart of the waist of the foot. The toe is attached to the front arm of the lever by a leather loop. This arrangement can be worn inside the boot and most patients can also bear it at night. In some, however, the pressure of the fulcrum interferes with sleep and in such cases I recommend a sole-plate for night use.

Operative treatment.—Tenotomy, syndesmotomy, osteotomy, partial and complete excision of the head of the metatarsal bone, and excision of the base of the first phalanx have all been employed. My own experience is limited to partial excision and complete excision of the head of the metatarsal bone. Of these two operations I now usually adopt the latter; firstly, because there is less pain immediately after the operation, and secondly the shortening of the great toe diminishes the tendency to return of the deformity. The incision which I have used is a longitudinal one at the supero-internal aspect of the joint. The head of the bone is readily removed either by a chisel or a Gighli's saw. The internal lateral ligament can be shortened and fixed by one or two cat-gut stitches and the bursa, villous growth, and synovial membrane generally can be removed. Hæmophilia, diabetes, defective kidneys, and broken-down constitution are the chief contra-indications to operative interference.

HALLUX VARUS.

Hallux varus, as already stated, is the converse of hallux

valgus. Some confusion has arisen by certain authors using the term "hallux malleus" as a synonym. The chief characteristic of hallux malleus is pronounced flexion at the metatarso-phalangeal joint and such flexion is combined with adduction of the great toe in some cases of hallux varus; when this is the case it would, perhaps, best be described as "hallux varus et malleus." The congenital hallux malleus observed by Nicoladoni to become complicated in after-life by flat foot may in some cases present a certain degree of hallux varus in the original deformity.

Hallux varus may occur congenitally either alone or as part of the deformity of congenital equino-varus. In the latter condition if treatment is begun at the proper time—i.e., soon after birth—the deformity is always cured. Hallux varus has been noted in cases of congenital absence of the fibula. No case of pure congenital hallux varus has come to my notice, but I should anticipate that persistent careful bandaging would remedy the condition.

Hallux varus in dichotomy of the great toe.—A set of four casts in the museum of the City Orthopædic Hospital were taken from a patient under the care of the late E. J. Chance. The feet before operation had each six digits, as in Fig. 3 to

FIG. 3.

To the right a cast of a foot with dichotomous hallux, the innermost digit being in a state of hallux varus; to the left a cast of the same foot after amputation of the innermost digit.

the right, the innermost being in the position of hallux varus. In such cases removal of the innermost toe is all that is required, and Chance's case shows that the result is highly satisfactory.

Acquired hallux varus.—The records are very scanty on this head and I must confess that I have no personal experience to give. It occurs in some cases of severe genu valgum. In certain paralytic and traumatic cases this deformity would probably arise.

In conclusion I would venture to state my opinion that every case of hallux valgus is curable. The most troublesome cases are those in which a second hammer-toe has been (quite unnecessarily) removed previously to the patient being seen.

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A CASE OF LEPROSY.

BY JOHN D. GIMLETTE, M.R.C.S. ENG., L.R.C.P. LOND.,
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MANY clinical cases of leprosy have been published, but the simple example here recorded is of general interest. The patient was an unmarried Eurasian, aged 27 years. He was born in Singapore but had lived for some time in the Malay Native States. He was a clerk and interpreter in the police-court at Pekan. There was no case of phthisis in the family as far as was known. One sister suffered from "fits." His father and brother were alive and well. The mother had died in child-bed. The patient had had the ordinary ailments of childhood, but otherwise had been in fairly good health until about Christmas, 1894. He was then treated at Pekan for "simple rheumatic inflammation of the tendon sheaths with some degree of high temperature and glandular swellings." In March, 1896, this illness recurred and was accompanied by a curious bilateral purpuric eruption on the legs fugitive in character. There was again acute inflammation of the tendon sheaths of both feet and of the right hand. He was sent to Singapore, where he was found to be suffering from a peripheral neuritis which was diagnosed as beri-beri. About this time the legs were swollen and he was unable to walk. At the end of June, 1896, he returned to duty. He said that he had squandered his money ever since in the purchase of useless, empiric drugs, but that he had never felt himself again. During the last two years he had had attacks of dysenteric diarrhœa and had been gradually losing heart and strength.

When I saw the patient he complained greatly of weakness and said that his legs often felt useless, especially after walking. He had a rash which came and went. It was on the face, the legs, and the arms. It was not painful and did not itch. About six months previously sores broke out on his fingers, which healed up from time to time of their own accord. Four or five months previously he felt a small lump on the nose. It had given little or no inconvenience and had remained about the same size. He noted that he fumbled in dressing himself and could not button his clothes with ordinary precision. For some time he had had a chronic cold and had snuffled, but he had had no cough. The appetite was indifferent, the teeth were decayed, and the bowels were irregular. On examination he was found to be a tall, thin, sad-looking man with an unnatural aspect. The skin of the face was coarse, with a livid flush on each cheek. The ears were enlarged, projecting, and deformed and were wrinkled and nodular. At the bridge of the nose there was a small broad tubercle. The eyebrows were scanty. The hands were wasted as if from paralysis of the ulnar nerve and the fingers showed clearly some trophic lesions in the skin. They were covered with dry sores, especially on the back of the phalangeal joints. Otherwise the skin here was smooth and glossy as if it had been varnished. There was impairment of sensation in the skin of the fingers and forearms and in places there was anæsthesia. The muscles of the arm and especially those of the forearms were wasted. The interossei muscles were atrophied and doubtless an application of the Roentgen rays would already demonstrate atrophy of the metacarpal bones. The body generally was covered with large patches of brownish pigmentary stains. The chest was ill-developed, but the heart and lungs appeared to be normal. On the outer side of each leg there were patches of anæsthesia with purplish eruptions on the shins. A distinct nodule, among others, of about the size of a split pea could be felt on the extensor aspect of the right leg. The patient was sent to Singapore where he was seen by Dr. M. F. Simon, in consultation with Dr. J. T. Leask and Dr. W. G. Ellis. They found the bacilli of leprosy in large numbers in the discharge from a sore on the finger and in serum taken from a nodule on the ear.

I have much pleasure in expressing my thanks to the Principal Civil Medical Officer (Dr. Simon) for his kindness in confirming the diagnosis. There were no other cases of leprosy in Pekan at the time. The disease, in fact, is not common in Pahang, where it is usually met with among the poor of the native population. In this case, however, the patient was an intelligent member of the community following a public occupation and leading a more or less healthy life. It is an instance of the mystery which still surrounds the origin of isolated cases of leprosy. The history is of special interest now that the compulsory segregation of lepers is under the consideration of the Government.

It is agreed that leprosy is a contagious disease. All observers, however, who are not influenced by any theory and who have no desire to fit the facts of their cases to any favourite doctrine will, I think, admit that a certain number of cases appear to militate against a very widely received opinion as to the advisability of compulsory segregation. Ample as the reason for legal measures may be in the colonies, they will, I think, allow that under certain circumstances voluntary isolation is a sufficient safeguard. I refer

especially to those periods of latency which may occur during the course of the disease.

In the case given above the patient had given up his occupation and had made no attempt to trifle with his affliction. If any inquisitorial interference with his home had been instituted there would not have been wanting critics to designate it as a grave offence against the public liberty. Doubtless if the disease had been found out earlier he would have been discharged from his office long before. It may be fairly presumed, however, that until the open sores had developed he had not been an immediate source of danger to the crowds in the police courts. After that time the danger from inoculation would have been great. In this particular case the difficulties in diagnosis of the early stages of leprosy were well exemplified. It was at first confounded with an infective form of rheumatism and then with the peripheral neuritis of beri-beri. Later the patient was popularly supposed to be suffering from tertiary syphilis. Like hydrophobia and diphtheria leprosy is most deadly when it forms a focus, and although the bacillus so closely resembles that of tuberculosis the resisting power of man to the bacillus lepræ is probably not as great as that to the tubercle bacillus. In both cases isolation as a preventive measure affords the best and only protection for the public health, and although the hygienic treatment of tuberculosis in sanatoria seems likely to repay at last the persevering quest of modern scientists the cure of the individual leper seems more likely to be brought about by the inoculation of some antitoxin.

Kuala Lipis, Pahang, Malay Peninsula.

A CASE OF SUPPRESSION OF URINE OF 60 HOURS' DURATION TREATED BY OPERATION.[1]

BY FRANCIS JAFFREY, F.R.C.S. ENG.,
ASSISTANT SURGEON TO ST. GEORGE'S HOSPITAL.

A MAN, aged 53 years, was admitted into St. George's Hospital on Dec. 3rd, 1899, complaining that he had not felt well for several weeks. During the last week of November he suffered from pain in the left loin and a dragging sensation in the region of the left kidney. Micturition was frequent, his urine appeared natural in colour, and he had never seen any blood. On Dec. 1st he was unable to pass any urine whatever and complained of acute tearing pains in the left groin and lumbar regions with frequent vomiting. He was seen by a physician, under whose directions hot fomentations were applied to the loin and diuretics given internally, but with no good result. The suppression persisted during the next two days. A catheter was passed, but only a little blood-stained mucus was drawn off. No definite tumour could be felt at first, no doubt owing partly to the thickness of the abdominal walls and to their rigidity, but on the 3rd a very definite tumour could be felt which was thought to be a distended kidney, probably hydronephrosis. He had never had any trouble with his urinary tract and apparently his only illness was an attack of congestion of the lungs when he was much younger.

On his admission to the hospital, when I saw him on the evening of Dec. 3rd, 60 hours from the onset of the total suppression of urine, he appeared to be healthy. He was a somewhat stout man. His expression was anxious and he was restless. There was marked perspiration, especially of the hands, and the tongue was fairly moist. The pulse was rapid (124) and intermittent, dropping a beat about every seventh beat, and the respirations were 24. He complained of considerable pain and tenderness over the region of the left kidney. There was marked resistance of the abdominal walls on the left side, but by careful palpation a large rounded swelling could be felt, about as large as a cocoa-nut, soft, though no actual fluctuation could be made out. The manipulation appeared to cause much pain, so it was not continued. A catheter was now passed, but only a little blood-stained mucus was removed; I therefore recommended an exploratory operation by a lumbar incision and draining the supposed hydronephrosis.

[1] A paper read before the Harveian Society of London on Feb. 15th, 1900.

Gas and ether were given and an oblique incision six inches long was made in the left lumbar region. Upon opening the swelling it was found not to contain urine, but blood-clot and serum to the quantity of rather more than a pint, which was situated between the perinephritic fat and the kidney, and on incising the capsule blood was found between the capsule and the cortex. The capsule being stripped off the kidney over a considerable area the kidney appeared to be larger than normal, and on incision it was much congested and bled very slightly. The pelvis of the kidney was full of blood-clot. No calculus was felt. A sound was carefully passed into the upper part of the ureter but nothing was felt. The pelvis of the kidney and the space outside the kidney were freely irrigated with warm water at a temperature of 102° F. A large-sized drainage-tube was passed into the pelvis of the kidney and the wound was sewn up with silkworm-gut sutures and dressed with cyanide gauze and wool. Two hours later the dressings had to be changed as it was found that urine was being freely secreted and passing from the drainage-tube. During the night the drainage-tube slipped out of the pelvis of the kidney and I did not think it necessary to replace it.

Thirty-six hours later practically all the urine was passed by the urethra. The first urine passed contained blood but not in any great quantity, the following day it was only slightly turbid, and before the end of the week there was no blood. The urine was pale in colour, of a specific gravity of 1015, it was faintly acid, and there was no albumin. The quantity passed in 24 hours was 65 ounces, and the quantity increased daily during the next fortnight till it reached 100 ounces in the 24 hours and the following week it gradually diminished to 70 ounces. The intermittent condition of the pulse disappeared during the patient's stay in the hospital. The stitches were removed on the sixth day and on the sixteenth day he was allowed to get up. He left the hospital just three weeks after admission, quite well.

This case is one of considerable interest—firstly, as to the cause of suppression; secondly, as to the question of operation in similar cases; and, thirdly, with regard to the question which has recently arisen regarding the insurance of the lives of patients after operation.

As to the cause of suppression of urine it may be placed under two heads (1) obstructive suppression due to some mechanical cause, and (2) non-obstructive suppression due to a pathological cause. It is difficult to know in which class to place this case. In obstructive suppression the usual cause is an impacted calculus either in the pelvis of the kidney or in some part of the ureter, the other kidney not being functionally active or being so diseased that it is unable to carry on the increased amount of work. I can recall a case very much resembling the above. Some years ago I was called to see a case of total suppression of urine, but when I saw the sufferer operative interference was out of question, the patient being already moribund. At the post-mortem examination the capsule of the kidney was completely stripped off up to the hilum and contained a pint of blood-clot, the kidney was enlarged, and on cutting into the pelvis of the kidney a scale-like piece of calculus was blocking up the ureter. The very slightest manipulation would have displaced it. The opposite kidney was totally obliterated and its place was taken by a large branched calculus covered by only the capsule. It is quite possible that the present case was of a similar nature and that the irrigation displaced the calculus thereby allowing the free passage by the ureter. Of course, it is quite possible that the suppression was due to kinking or pressure of the ureter by the blood surrounding the kidney. Of likely causes of non-obstructive suppression the only one is congestion of the kidney. The patient admitted that he had been dieting himself with the view of reducing his weight—in other words, he had been "Banting"—and in a patient over 50 years of age this might easily have caused marked congestion and thereby suppression.

As to the question of operation in these cases I am of opinion that if one is certain of the diagnosis the sooner the kidney is explored the better. There is a difficulty in many cases of ascertaining which kidney is affected. Laparotomy and the examination of both kidneys have been recommended followed by a lumbar incision and the removal of the stone, but there are many cases recorded which have been operated upon and in which no stone has been found. Some authors place the number as high as one case in every five where no stone is found but after the operation all the symptoms of stone disappear. Is not this due to

relief of tension? Mr. Reginald Harrison [2] in his address before the Medical Society of London and in THE LANCET [3] advocates reni-puncture in cases of kidney tension, and he quotes several cases which were benefited by operation after which the hæmaturia, the albuminuria, and the severe pain disappeared. Dr. David Newman of Glasgow [4] has published a very interesting series of cases of occasional suppression of urine treated by operation with complete recovery from all the symptoms, and he also is of opinion that these cases were due to increased vascular tension in the kidney. The case which I have now brought forward is much more severe than any case quoted by either of these authors, both as to the length of time of the total suppression and of the condition of the kidney and the parts around it. I certainly feel inclined to recommend operation where the ordinary medical treatment has failed after a reasonable trial.

Now, as to my last point, that of insurance of patients after an operation on the kidney. This patient applied to an insurance company but was told to wait three months. Apparently his only trouble was an intermittent pulse, but before the three months were up he developed suppression of urine and when he recovered he again re-applied but they refused to insure him at any price. I should like to know whether this man's life is less valuable now than it was before the operation? I am inclined to doubt it. The same question might, and probably does, occur with much younger patients.

Bentinck-street, W.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

A CASE OF PREGNANCY COMPLICATED BY FIBROUS TUMOUR OF THE SUPRA- AND INFRA-VAGINAL CERVIX; ABDOMINAL HYSTERECTOMY; OPERATION; RECOVERY.

(Under the care of Dr. WILLIAM DUNCAN.)

A MARRIED woman, aged 38 years, was admitted into Prudhoe Ward of the Middlesex Hospital on June 1st, 1899, complaining of excessive loss of blood and of a lump in the abdomen. There was nothing to note in the family history of the patient. The catamenia began when she was 12½ years of age; they were regular every three weeks, lasted for three days, and were always accompanied by pain and headache until after the birth of her first child. The last period had ended seven days before admission. She was married 19 years previously and had had 10 children; four of them were alive and healthy and six had died from convulsions between the ages of three weeks and 12 months. She had had three miscarriages at three months, the cause of which was not known. The patient had had a miscarriage 18 months previously and since then the periods had been excessive, sometimes lasting three or four weeks and being accompanied by clots. The patient said that at times she had lost a large quantity of blood. She had noticed a lump in the right side of the abdomen for the previous two years and thought that it had only got slightly larger. Micturition had been frequent but not difficult or painful, and the bowels had been regular. She thought that she had been getting thinner for the previous two years.

On admission the patient was found to be a fairly healthy-looking woman. The cardiac, respiratory, and urinary systems were healthy. Her appetite was bad, she had no pain after taking food, and she occasionally felt sick (but did not vomit) at no particular time of the day. The tongue was furred. Examination showed that the abdomen was somewhat distended by a smooth, firm, elastic tumour reaching up to the umbilicus and inclining more to the right side. The tumour was fairly mobile but movement caused pain; no intermittent contractions could be felt. It was dull on percussion and both flanks were resonant. Auscultation revealed a loud uterine souffle but no fœtal heart-sound. The breasts were not enlarged, but the veins crossing over the chest were prominent and the areolæ were somewhat deeply pigmented. Some secretion could be squeezed out of the right nipple. Vaginal examination under anæsthesia revealed a soft round red tumour filling the upper half of the vagina and apparently springing from the posterior and left side of the cervix, on which sides it was closely adherent to the vaginal wall; indeed, it seemed to be growing in the vaginal wall; in front, high up, the finger-tip could just reach the os uteri. The tumour was continuous with the abdominal tumour and moved with it. The sound was not passed. The tumour was so soft that a volsellum forceps tore it and caused free bleeding; this was controlled by a silk suture and iodoform gauze packing.

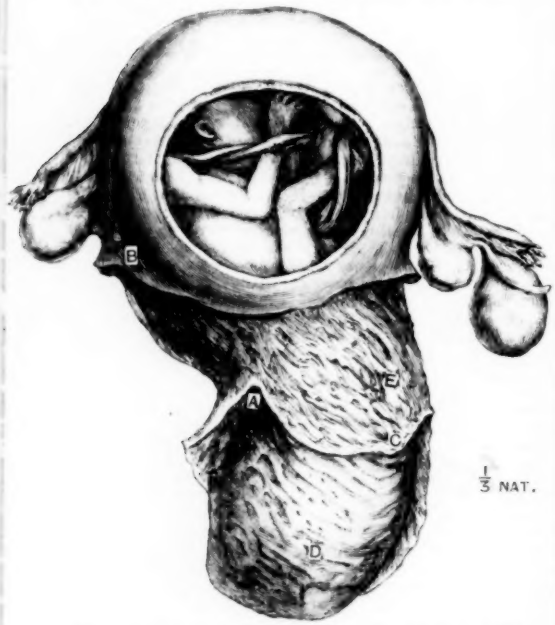
Dr. Duncan said that the case was evidently one of a soft fibroid (possibly sarcomatous) growing from the supra-vaginal cervix down into the vagina and involving the vaginal wall. He thought that the patient was pregnant and that the uterine body was probably also myomatous. It was evident that the only way of dealing with the growth was by performing total abdominal hysterectomy. The operation was performed on June 22nd. Gas and ether having been administered an incision extending from the umbilicus to the pubes was made and the abdomen was opened. A bluish-red tumour presented which was evidently a gravid uterus as the fœtus could be felt floating in the liquor amnii. The tumour (which corresponded to about a five months' gestation) was drawn out of the abdomen. Then the right broad ligament was transfixed, tied in two places, and divided; next the divided layers of the broad ligament on the uterine side were separated by the finger down to the cervix until the uterine artery was felt pulsating. An aneurysm-needle armed with silk was carried round the vessel, then after withdrawal of the needle the silk was firmly tied, and thus both the uterine and ovarian vessels were secured on the right side. By a similar procedure the vessels were secured on the left side. Next a scalpel carried right round the uterus (about two inches above the attachment of the bladder) made two flaps of peritoneum only; these were stripped off right down to the cervix. The anterior flap was carefully dissected down close to the uterus until the finger of an assistant, which was pushing up the anterior fornix per vaginam, was laid bare. The vaginal roof was next transfixed, piece by piece, tied with silk, and divided close to the uterus right round until the mass was free. As the tumour was intimately adherent to the vagina on one side some of it had to be cut away during removal. All bleeding points were next secured, then the ligatures (one end of each having been left long) were pushed down into the vagina, and this cavity was stuffed with iodoform gauze; the cut surfaces of the vaginal roof were then brought together with fine silk, and lastly the peritoneal flaps were brought accurately together by a continuous Lembert's suture. During the whole of the operation the intestines were covered up by a large flat sponge which was inserted after the abdominal cavity had been opened. This sponge was now removed and the opening was closed in the usual way—(*a*) by continuous fine silk suture for the peritoneal edges; (*b*) by interrupted silk sutures for the edges of the rectal sheaths; and (*c*) by continuous silk suture for the skin. The wound was dressed with a strip of iodoform gauze, then a pad of blue wool, which was held in place by a many-tailed flannel binder. The patient stood the operation well, her pulse being of good volume and 100 per minute.

The subsequent progress was good. The bowels were opened by an enema on the seventh day and the superficial stitches were removed, the wound being perfectly healed. There was a rigor of 10 minutes' duration on the fourth, seventh, and eighth days, but the temperature and pulse only increased slightly; there was nothing to account for the rigors and the patient said that she had been subject to similar attacks for seven or eight years. On July 14th (the twenty-second day after the operation) there was a good deal of purulent vaginal discharge and several ligatures were removed from the vagina. On the 29th there

[2] Transactions of the Medical Society of London, 1897, vol. xx.
[3] THE LANCET, Jan. 4th, 1896, p. 18.
[4] Renal Cases, Maclehose and Sons.

was very little discharge. All the ligatures except one had come away; the patient was able to get up and said that she felt well. On August 14th, as the remaining ligature showed no signs of coming away, it was removed under anæsthesia. On the 21st the patient was discharged well.

Remarks by Dr. DUNCAN.—This case is a most interesting and unusual one. In the first place, although fibroids of the cervix uteri are not very uncommon it is in my experience extremely rare to find the growth as it fills the vagina being intimately adherent to the vaginal wall. On a cursory examination the tumour might have been mistaken for a fibroid polypus which had been extruded through the os uteri—indeed, I believe the case was sent into the hospital as such—but careful examination under anæsthesia revealed its true nature. Then with regard to the abdominal tumour one might well be excused for diagnosing it as being a soft myoma of the uterine body, especially as the patient had noticed a lump in her abdomen for a couple of years. On



A. Os uteri externum. B. Cut edge of peritoneum on anterior uterine wall. C, Cut edge of vaginal reflection pushed down. D, Vaginal portion of tumour. E, Supra-vaginal portion of tumour.

palpation, however, the feel of the mass was more like that of a gravid uterus, and although the patient had metrorrhagia instead of amenorrhœa and there was no morning sickness nor were intermittent contractions felt, still I came to the conclusion from the state of the breasts and the feel of the mass that it was a case of pregnancy complicated by fibroids of the body and cervix uteri.

The treatment clearly resolved itself into that of total abdominal hysterectomy even if (as proved to be the case after operation) the fibroid was limited to the cervix, as on most careful examination under anæsthesia I could not satisfy myself that it was feasible to remove the mass per vaginam with safety to the patient. As regarded the proper time to operate the question arose, Should the pregnancy be allowed to go on to near full term, as then at the time of operation the child's life could be saved? I decided against this and in favour of immediate operation on three grounds: (1) at the end of pregnancy a woman is in a most unfavourable state of health for recovery after what would necessarily be a prolonged operation; (2) she would have continued to lose blood for several months before the operation; and (3) the possibility of the tumour being of a sarcomatous nature (this happily proved not to be the case). At the time of the operation the only difficulty experienced was in separating the tumour from the vaginal wall, as one had to be extra careful not to include the ureter in one of the ligatures. To my mind, total abdominal hysterectomy (so-called panhysterectomy) can never be so easy or anything like so safe an operation as abdominal hysterectomy with intra-peritoneal treatment of the stump of the cervix. In the case just recorded, however, there was no alternative but to remove the entire uterus.

The whole subject of "the modern treatment of uterine fibroids" is so extremely important and as such erroneous views as to the mortality of hysterectomy for fibroids have been recently promulgated it is my intention (with the kind permission of the Editors of THE LANCET) to publish in a week or two a paper with the above title. I may here mention that in 1897 I published in THE LANCET[1] a paper giving 18 consecutive cases of abdominal hysterectomy for fibroids, being all the cases which I had operated on up to then, with one death which occurred suddenly from pulmonary embolism 18 days after operation when the patient was convalescent and about to leave the hospital, so that I think the death might fairly be put down as *not* due to hysterectomy. Since the publication of my paper I have performed the operation 50 times with three deaths, so that my results up to now are as follows: in private practice, 21 cases with no death; in the Chelsea Hospital for Women, 22 cases with no death; and in Middlesex Hospital, 25 cases with four deaths; which gives a mortality (if I exclude the death from embolism) of about 4½ per cent. It is to be noted that my four fatal cases occurred in a general hospital. As a matter of fact I have not had a single fatal case *from any operation* in my private practice since August 11th, 1895 (four years and six months), or in the Chelsea Hospital for Women since Oct. 8th, 1897 (two years and four months).

The only correct method of arriving at the true mortality of any operation is to take the results of those who have performed the particular operation a good many times and not to lump together the results of numerous operators, some of whom with only one or two operations may have a mortality of 100 per cent. In an interesting address entitled "Some Points in the Natural History of Uterine Fibroids"[2] Dr. F. H. Champneys has fallen into this error and makes the average mortality from abdominal hysterectomy for fibroids to be 17 per cent. At St. Bartholomew's Hospital the mortality was 27 per cent., or if he had only included the cases up to the end of 1898 (as at the Samaritan and Chelsea Hospitals) the mortality at St. Bartholomew's Hospital would be actually over 31 per cent.—a truly dreadful mortality and one which would render the operation of abdominal hysterectomy absolutely unjustifiable except in the rarest cases. Like Dr. Champneys, I made exactly the same mistake in 1885 when I read a paper before the Obstetrical Society of London on extirpation of the uterus for cancer. With misguided zeal I collected all the cases I could find which had been published both in our own and foreign countries in which the uterus had been removed either through the abdomen or per vaginam, and in my statistics the mortality for abdominal hysterectomy worked out at 72 per cent. and that for vaginal hysterectomy at 28·6 per cent. Doubtless the percentage was altogether wrong; at the present time I suppose most observers would agree that the mortality from vaginal hysterectomy does not exceed 5 per cent., and in my opinion the average mortality from abdominal hysterectomy for fibroids is not more—possibly less—than this.

ERRATA.—In the case of bubonic plague treated with large doses of carbolic acid, as described in THE LANCET of Dec. 9th, 1899, p. 1589, the words "six ounces" on line 50 should be "one ounce"; 12 grains of carbolic acid were given for a dose, not two grains.

[1] THE LANCET, May 15th, 1897, p. 1323.
[2] THE LANCET, Jan. 20th, 1900, p. 147.

TORQUAY HOSPITAL.—The annual meeting of this institution was held on Feb. 15th under the presidency of Mr. R. Mallock. The medical report showed that 359 in-patients had been admitted, against 366 in 1898. The expenditure amounted to £2127 and there was an adverse balance of £382. The committee decided that the honorary medical staff should form a council for the consideration of all professional subjects connected with the hospital and that all by-laws, &c., proposed by them should be subject to revision and confirmation by the board of management.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Acute Ménière's Symptoms in Leucocythæmia.

A MEETING of this society was held on Feb. 27th, Dr. G. FIELDING BLANDFORD, the Vice-President, being in the chair.

Dr. F. PARKES WEBER read a paper on Acute Ménière's Symptoms in Spleno-medullary Leucocythæmia, with special reference to the Anatomical Changes found in Acute Leucocythæmic Affections of the Ear (a pathological report on the internal ears being supplied by Mr. Richard Lake). The patient was a man, aged 31 years, suffering from advanced leucocythæmia (this term being used as synonymous with leukæmia). He was admitted on March 31st, 1898, to the German Hospital with great enlargement of the spleen and liver. He had had malaria six years previously. He died on Oct. 1st, 1898, from collapse following internal hæmorrhage. During life the ophthalmoscope showed the presence of the so-called "leukæmic retinitis." About six months before his death he was attacked with acute ear symptoms (headache, vertigo, and vomiting). Examination of the patient's hearing, &c., pointed to the symptoms being probably due to a leucocythæmic affection of the internal ears; and in a very short time the man became quite deaf. Post-mortem examination of the ears proved that a portion of the scala tympani (one side only examined) and the perilymphatic spaces of the semicircular canals (both sides examined) were filled up with newly formed fibroid and bony tissue. The scala vestibuli, canalis cochleæ, and vestibule showed only comparatively slight changes. Transverse sections of the nerve trunks showed no obvious change. A short account was given of similar cases which had been published. From a comparison of the various cases it was concluded that the pathological appearances presented by the internal ears after death differed in different cases, partly in accordance with the length of time which had elapsed between the onset of the acute aural symptoms and the death of the patient. In most cases of acute leucocythæmic affection of the internal ears post-mortem investigation suggested that the following was the sequence of events: the commencement of the aural symptoms (vertigo, headache, vomiting, and deafness) marked the occurrence of more or less extensive extravasations of blood in the semicircular canals and the cochlea, the process being doubtless nearly always more or less symmetrical and simultaneous in the two ears. In such cases, though apparently lymphocytic infiltration and hæmorrhages might be found in various parts of the ears after death, the labyrinthine hæmorrhage was probably the essential lesion which gave rise to the acute aural phenomena in question. Subsequently vascularisation and organisation proceeded in the usual manner, with the result that the clot became gradually replaced by newly formed connective tissue, closely connected by its blood-vessels with the endosteum of the bony labyrinth. In process of time (if the patient lived long enough) more or less ossification occurred in the newly formed tissue, and irregular processes of bone projected inwards from the walls of the bony labyrinth. At this stage of the pathological process transverse sections of the bony semicircular canals mostly showed the membranous canals surrounded by a meshwork, or by irregular masses of newly-formed bone and fibroid tissue, completely filling up the perilymphatic spaces. Besides the striking cases in which acute (apoplecticiform) Ménière's symptoms occurred there were also leucocythæmic patients, as pointed out by Schwabach, who presented aural troubles of a less severe or less sudden nature. These lesser symptoms might be in part altogether independent of the leucocythæmia, but in part due to small hæmorrhages and patches of lymphocytic (leucocythæmic) infiltration in various part of the auditory apparatus. Dr. Weber drew attention to the light thrown by leucocythæmic cases of Ménière's symptom-complex on cases associated with constitutional disorders other than leucocythæmia (such as arterio-sclerosis, syphilis, chronic gout, renal fibrosis, and the various cachectic conditions in which hæmorrhages often occur). He sketched a rough pathological and clinical classification of such cases; the exact nature, however, of the pathological condition in the ear could not often be determined with certainty merely from the symptoms observed during life.

Dr. F. W. MOTT narrated particulars of a case resembling that of Dr. Weber's in some respects, though differing in others. The patient was a man, aged 38 years, who was admitted into Charing-cross Hospital on Nov. 10th, 1899. He was said to have had a severe attack of "influenza" two years before, since which date he had been in bad health. Six months before admission he was seized with sudden pain in the left side of the abdomen, and a little later with pain in the head and deafness, with loss of power of maintaining his equilibrium. The deafness came on suddenly, first in the left and then in the right ear. On admission he looked dull and was a little cyanosed, the temperature being 97° F. He gave his answers very slowly. The abdomen was distended, and the liver and spleen were very large. The lymphatic glands were also enlarged. The blood contained only 54 per cent. of hæmoglobin, but the main change was an enormous increase in leucocytes, of which there were almost as many as red corpuscles. There were large numbers of multipartite nucleated white cells, very few lymphocytes, and a good many myelocytes (with big nuclei). The muscular power of the patient was good; there was no loss of coördination in the arms, but he could not balance himself in walking and could not stand at all with his eyes shut. He was at first thought to have hæmorrhage into the cerebellum. The knee-jerks were absent on both sides. Vision was very imperfect. Accommodation was good, but the right reflex was sluggish. The fundi showed slight changes. The hearing improved considerably. Taste and smell were normal. He responded to questions in a drowsy manner. Seven days after admission he was found to be stone deaf in both ears on waking in the morning. Three days later he died comatose. At the necropsy the liver weighed five and a half kilogrammes and the spleen 1·8 kilogrammes. The blood was of a dirty brick-red colour; there were hæmorrhages into the brain which was congested. Both the petrous bones were soft and friable from rarefaction of the bone. The spinal cord and nerves showed no degeneration. There was hæmorrhage into the posterior spinal roots and hæmorrhage into the cochlea. The hæmorrhage into the semicircular canals accounted for the loss of equilibrium. This and the deafness were accounted for by hæmorrhage into the cochlea and labyrinth. Dr. Mott's paper was illustrated by lantern slides.

Mr. RICHARD LAKE, in replying, remarked that the ligamentum spirale had not previously been described as being ossified, but this lesion existed in Dr. Weber's case. It was the perilymphatic spaces in the semicircular canal which had been nearly filled up with newly-formed fibroid and bony tissue (microscopic specimens were exhibited). In Dr. Mott's case there was wanting any new formation of bone; but the hæmorrhage had produced the same symptoms. He would like to ask what the porosity of the bone was to be attributed to.

Dr. MOTT, in replying, said that his case resembled myelogenic leukæmia. The proliferation of the bone-cells was probably in some way connected with the fragility of the bones.

Dr. WEBER remarked that in Dr. Mott's interesting case the three distinct attacks differed from most cases. The fact that the organ of Corti was preserved accounted for the recovery of hearing. The penis was an organ liable to be early attacked in leukæmia and priapism was sometimes the first symptom of the disease to attract attention.

MEDICAL SOCIETY OF LONDON.

Adjourned Discussion on the Pathology and Treatment of Appendicitis.

A MEETING of this society was held on Feb. 26th, Dr. F. T. ROBERTS, the President, being in the chair.

The discussion on the Pathology and Treatment of Appendicitis was resumed, the PRESIDENT remarking that speakers were invited to discuss the subject under four headings: (1) the non-operative treatment; (2) the indications for operation; (3) the nature of the operation advised; and (4) the after-treatment of the case.

Mr. MARMADUKE SHEILD congratulated Mr. Lockwood on

his success in explaining or associating pathological conditions with clinical manifestations. His contributions on the subject constituted a distinct step forward. Bacteriological invasion of the coats of the appendix was at the bottom of most of the symptoms. First, as to non-operative treatment it would never be found that all would agree. In his opinion this expectant plan of treatment was only justifiable in very mild cases. In general terms the more severe the case the more urgent the necessity for operation. Great pain and vomiting and quickness of pulse were certainly indications for operation. In mild cases he would watch and do very little, avoid opium (except in very small doses), and give mild aperients. The great difficulty in such cases was to tell what was going on in the appendix. For example, he remembered a patient, aged 16 years, attacked for the first time with slight pain in the iliac fossa, and very mild symptoms, though the pulse was over 120. The symptoms did not call far immediate operation. However, an exploratory operation was done and in removing the appendix it burst and a lot of pus poured out. Secondly, turning to the indications for operation, most would agree that fulminating and recurrent cases should be operated on without hesitation. But in slight cases there would be much difference of opinion. It was a common error to suppose that if no lump could be felt cases could wait and *vice versâ*. The fact was that if a lump could be felt cases could wait with less danger than if no mass could be felt. In the latter condition, if the symptoms, and especially the pulse (which should be taken every hour), indicated progression, these were the very cases on which operation—at any rate, an exploratory operation—should be performed. In the third place, as to the details of the operation, he thought, as a rule, that the incision should be as small a one as possible, and his plan was to split the muscles, not to cut them across. But in cases of difficulty the opening should be as large as necessary for manipulation and exploration. Stitch-abscesses in the abdominal wall might be avoided by the use of kangaroo tendon. Silk should not be used in muscles and the stitches need not be drawn too tight. Finally, as regards the after-treatment, powerful salines by the mouth and turpentine enemata were the only hints he could offer. No two men could ever quite agree as to the procedure and he thought that physician and surgeon should consult in most cases. The higher the rank of the patient in life the less chance he would seem to have of recovery from appendicitis, and he had witnessed several tragedies among the better class of patients from the desire on the part of the patient, and even his medical advisers, to avoid the risks of an operation which, after all, were *nil*.

Dr. H. A. CALEY wished in the first place to reply to the criticism that cases of appendicitis which in a recent paper he had classed as "recovered" could not be regarded as "cured" because they might subsequently relapse. He pointed out that care had been taken to exclude all cases—some 30 per cent. of the total—in which recurrence subsequently occurred from the 99 of his illustrative series of 200 cases referred to as having recovered from the attack. A small proportion of these cases might have had relapses and have been treated elsewhere, but any such source of error could not detract from the general conclusion that a larger proportion of cases of the milder forms of appendicitis did recover from the attack and did not experience recurrence. This was of much importance in relation to treatment. It involved the inference that there was a large class of cases in which operative treatment could not be regarded as necessary. The all-important consideration in relation to treatment in the first instance was whether operative measures were or were not called for. He regarded as unequivocal indications for operation conditions which corresponded with any one of the three following groups: (1) appendicitis with diffuse peritonitis, actual or threatened, including the acute fulminating cases of perforative or gangrenous appendicitis; (2) appendicitis with local suppuration; and (3) relapsing and chronic cases. Practically, however, if the case were seen early it might be quite impossible to determine to which category it belonged, though the prospect of recovery turned upon anticipating a generalised peritonitis. He therefore considered that to the above three groups, in which on definite pathological grounds operation was advocated, there should be added a fourth group of borderland cases—(4) acute cases of appendicitis other than those associated with diffuse peritonitis, in which the suddenness of the onset, the severity of the initial symptoms, and the clinical conditions as a whole pointed to a severe lesion. Under such circumstances an exploratory operation was preferable to the delay involved by waiting for the further development of symptoms. In this connexion a frequent, and more especially an increasing, pulse-rate was highly significant. If the above four groups were treated by operation a large proportion of all cases still remained for non-operative treatment. In reference to the administration of opium Dr. Caley considered that judiciously employed it was of great value. Two important provisos should be borne in mind: first, opium or morphine should, if possible, not be given, certainly not continuously, until the case had been carefully investigated with a view to deciding as to the question of immediate operation; and secondly, it should not be given as a routine measure, but only to meet certain definite indications, such as pain, and should be discontinued as soon as the particular indications had been met.

Mr. HARRISON CRIPPS agreed with Mr. Sheild's eulogy of Mr. Lockwood's paper. Cases of appendicitis fell naturally into two categories: (1) comparatively mild attacks of intermittent inflammation; and (2) severe cases. In the first if the patient had one attack only, and that a mild one, he would not advise interference; but if he had a second or third then it showed that there was some abiding cause and operation was indicated. The risk to life was much less from operation than from letting the patient alone. He, like others, had had no fatal cases. Some surgeons had operated on 130 cases consecutively without one fatal issue. As to the symptoms, the absence of swelling and local tenderness were not indications that nothing was going on. The swelling and tenderness depended on the position of the appendix and the thickness of the abdominal walls. Mr. Cripps mentioned a case in which he had found a swelling in Douglas's pouch which was thought to be an inflamed ovary. It was operated on and found to be quite nine inches away from the usual position of the appendix which constituted the swelling. As regards the fulminating cases, he was not so sure what was the best course to advise. The risk of operation was considerable, but the risk of leaving them alone was greater. He thought that operation should be done at once in such cases except in those instances where it was evident that an abscess was forming but not yet completely formed; then a day or two's waiting was perhaps advisable. As to the details of the operation he thought the incision should be of good size. He did not approve of a pad being worn afterwards; it increased the tendency to prolapse and was not necessary if the patient kept quite quiet after operation.

Dr. WILLIAM HUNTER said it must not be lost sight of that 70 per cent. of the cases recovered without the surgeon ever seeing them, a fact which surgeons were too apt to forget. It was customary to make three pathological types of the disease—the catarrhal, the ulcerative (with concretions), and the fulminating (necrosis of the appendix). But the important point was that no distinction could be drawn between these as regards infectivity. A so-called catarrhal appendicitis infected the whole thickness of the wall of the bowel, as might be seen from some of the specimens which he had exhibited. As regards the indications for operation he thought that if the temperature rose after the first attack a surgeon should be called in. He believed that some advocated waiting until pus formed, but he did not agree with this. All cases were undoubtedly bacterial and infective, and the whole question was one between the amount, on the one hand, of resistance of the appendix and the constitution on the other. It was not possible to lay down absolute rules for decision, but it was best to regard all cases as potentially suppurative. It was generally considered imperative to clear out the lower bowel, but how could this influence the pathological process of the lesion? Was it not more important to keep the patient as quiet as possible? And, again, to this end small doses of opium, short of causing narcosis, with calomel, or some other intestinal disinfectant, were valuable remedies.

Mr. MACADAM ECCLES considered the successful surgical treatment of acute appendicitis depended chiefly on two conditions. The first was the virulence of the bacteria and the second the rapidity with which the diagnosis of the certainty of inflammation could be arrived at. The facility with which they invaded not only the walls of the structure but also the tissues of the meso-appendix had been clearly proved by Mr. Lockwood's sections. Mr. Eccles was at the present time investigating the bacteriology of what would be termed the normal appendicitis and had been greatly struck with some

of the facts which he hoped to bring forward on a future occasion. The diagnosis within the first 36 hours was not easy and that was ample time for the bacteria to migrate far beyond the lumen of the appendix. Supposing the case was left untouched the natural course would be either for the inflammation to diminish, possibly to disappear, or suppuration to occur or in comparatively few instances perforation and general peritonitis. If the inflammation subsides the appendix could be subsequently removed with less than infinitesimal risk. If an abscess formed this could be dealt with, as statistics abundantly proved, with comparative safety. He therefore considered that unless it was possible to deal with the case within a few hours of the onset it was generally wiser and the result likely to be more successful if the operator waited a few days; but each case must be taken on its own merits.

Mr. MANSELL MOULLIN quite agreed with the last speaker that in every case they had to do with infection. Turning to those cases in which suppuration occurred he thought they were much commoner than was usually believed, and where the symptoms suddenly subsided he thought it might possibly be explained by sudden bursting of the pus into the intestinal canal. What medical measures, he asked, were there, which were really capable of controlling the diseased process? while, on the other hand, the operation was a perfectly safe one. If at the end of 24 hours the pulse was still going up and the symptoms were progressing, and if they were still doing so at the end of 36 hours, he thought that an exploratory operation was the only justifiable course. When there was effusion into the right iliac fossa the case would in any case probably relapse, and he did not altogether agree with Dr. Allchin. He thought in general terms that physicians and general practitioners did not call the surgeon in to see the cases early enough.

Mr. LYNN THOMAS (Cardiff) had operated on 41 cases, of which two had died. Much profit might be derived, he thought, from cases of mistaken diagnosis. For instance, one case was sent in as a case of typhoid fever. Another case of appendicitis turned out to be gonorrhœal salpingitis. A third case with typical symptoms turned out to be abscess of the right ovary with pyosalpinx. A fourth case turned out to be duodenal ulcer, and in a fifth case occurring in a hysterical young lady the appendix was found to be absolutely healthy, and the patient was cured by Weir-Mitchell treatment. In the last 13 cases he had operated on he closed the wound with silk and with buried sutures, and he preferred this method because he believed it prevented hernia.

Mr. JAMES BERRY, referring in the first place to chronic relapsing cases, remarked that the operation was never fatal if done in the quiet intervals. As regards the operation itself the incision should be free and through the sheath of the rectus. He preferred silk and buried sutures. He had never had an after hernia with this method. The peritoneum should be sponged, not washed. He had had an excellent opportunity of comparing different methods of treating the peritoneum, and this point came out very clearly. He did not think cases of first attack should be operated on too early. It was a curious circumstance that if ever a surgeon suffered from appendicitis he almost invariably sent for a physician, but perhaps they were only affected with the milder cases which tended to spontaneous recovery.

The PRESIDENT remarked on the difficulties which might arise in connexion with the social position of the patient. He thought the best way to deal with these cases was by consultation between the physician, surgeon, and family practitioner.

Dr. W. H. ALLCHIN wished to urge the fact that there was a very large proportion of cases which needed no operation. No doubt all the cases were really infective in character. He felt that they were much indebted to Mr. Lockwood for his valuable contributions in this direction. The chief contra-indication to operation was undoubtedly the slow or moderate pulse, especially if the other features were not progressive. Any localised swelling was certainly of itself not a definite indication for operation. The administration of opium enabled the surgeon to make much better and truer observations on the pulse by relieving the restlessness and pain.

Mr. C. B. LOCKWOOD, in reply, was not surprised at the line the discussion had taken. But as regards the making of rules it was clearly impossible when even diagnosis was uncertain. He remembered one case which was variously diagnosed gall-stones, appendicitis, and (by himself) as some renal affection. Again, how could rules be formulated when the nature of the lesion was so uncertain and variable from day to day? A case of ulceration of the appendicitis one day might be gangrenous the next and perforative the next. The question what constituted a rapid pulse was a reasonable one, though anything over 100 indicated danger. Many speakers had spoken casually of appendicular abscess, but it was a most difficult thing to diagnose. But here, again, why not ascertain for certain by means of exploratory operation? He would like to know what was meant by a mild lesion and what were the symptoms which corresponded with it. Was it ulceration? As regards so-called cures he still thought this treatment should not be used. A patient left the hospital, it was true, but if he were watched and followed up a recurrence was always possible. The appendix might even appear quite normal to the naked eye and yet be diseased, and for his own part he would always choose a surgeon who would remove the appendix and not leave it behind.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Feb. 23rd, Dr. LEONARD SEDGWICK, the Vice-President, being in the chair.

Dr. STCLAIR THOMSON exhibited a case of Primary Tuberculosis of the Nasal Septum. The patient was a young woman who had already been shown before the society in October, 1897. In July, 1896, a growth of the size of a filbert was removed from the right side of the septum, diagnosed as tuberculous, though no bacilli were present. Three months later the base of the growth broke through the septum. She had active local treatment and three injections of Koch's tuberculin, to which she reacted. There were several other reasons in support of the diagnosis. When recently examined it was seen that the perforation had increased in size, but the condition in other respects was better. Sections showed giant cells and caseation but no bacilli. The treatment was painting with Mandl's solution of iodine and iodide of potassium and, later, guaiacol and olive oil. The progress had not been very satisfactory and Dr. Thomson said that he would be glad of suggestions for treatment.—Mr. ARTHUR BARKER referred to a case of very extensive tuberculosis of the nose which had involved the lacrymal sac and had perforated the soft palate. Treatment by painting with the perchloride of iron and copious dusting with iodoform had proved very successful.—Dr. PERCY KIDD agreed that the lesion was probably tuberculous, although the microscopical appearances were not conclusive. The sputum did not pass this way and that was probably why tuberculosis was so rare in this position.—Dr. THOMSON, in reply, remarked that there was no part of the respiratory tract so rarely attacked. He had been unable to find a record of any other observation of primary nasal tuberculosis by a British observer. Even as a secondary affection it was rare, although the larynx was so frequent a seat.

Mr. JACKSON CLARKE showed a female infant, aged one year and five months, with well-marked Lateral Curvature, probably due to rickets. The deformity was first observed at the age of 13 months. Such cases required, in addition to general treatment (diet, cod-liver oil, &c.) and daily manipulations, the use of an effective instrument. If left to themselves the patients became too often severely deformed and from the alteration of form of the thorax they suffered from respiratory and circulatory embarrassment, the cardiac and respiration rhythm being frequently doubled when adult life was reached. The form of support that was, in his experience, the most serviceable was the simpler form of Chance's splint. Poroplastic and other corsets and recumbency caused loss of muscular strength and general depression of physiological activity, and they were on this account to be avoided.

Mr. W. H. BATTLE exhibited a case of Operation for Traumatic Dislocation of the Knee. The patient was a woman aged 50 years. She was admitted for an injury to the right knee sustained during an attempt to enter a train while in motion. There were considerable bruising and displacement of the knee, and upon examination of the joint three of the ligaments (internal lateral and both crucial) were found to be ruptured. It was examined with the x rays and this revealed extensive injuries to the joint surfaces. No

improvement having followed manipulation it was decided to open the joint. On August 5th a free incision was made across the front of the joint. On opening the joint the anterior crucial ligament was seen to be torn away from the femur and the posterior crucial ligament lacerated. These were sutured and the internal lateral ligament was repaired. The case did well except for a little suppuration on the inner side of the wound and the patient could now walk normally. The patient had for all practical purposes recovered the use of the joint.

Mr. T. H. KELLOCK showed a case of Achondroplasia in a boy, aged four and a half years, the second of a family of four, the other children being normal. He was born easily at term, but had a "queer shape" even then. He was breast-fed until ten months; he began to crawl at six months, but did not walk until two years old. He was only 30½ inches in height (39½ inches being the normal), the deficiency bearing on the lower limbs, the bones whereof were shorter than usual and the epiphyses abnormally large. The head had a large vault and a narrow base and the patient presented the usual lordosis, prominent abdomen, genu retrorsum, waddling gait, and spreading fingers, all features characteristic of such cases, in addition to the peculiar manner of raising himself. The child was intelligent and had had good general health.

Dr. CHARLES W. CHAPMAN showed a father and son presenting a Peculiar Congenital Deformity of the Hands, with, in the child, Absence of the Radius. The right hand of the father exhibited the peculiarity in respect of the three phalanges that the second was flexed at a right angle on the first and the third on the second. The thenar eminence was almost entirely absent and abduction and adduction were non-existent. In the left hand the terminal portion, representing the thumb, was united for two-thirds of its extent with the index finger, and there was a wide cleft between the first and second fingers. The man used the index finger like a thumb and the hand served for most purposes. The son, an intelligent boy, aged three years, exhibited the following deformities. On the right, the thumb at its terminal part resembled a finger. It had three phalanges, the second and third being permanently flexed on the first. On the left there was an entire absence of the radius with a club hand of the radio-palmar variety.

Dr. LEONARD GUTHRIE showed a case of Asthenic Bulbar Paralysis (Strümpell's) occurring in a female, aged 23 years. She had been a waitress accustomed to long hours. Two years ago she noticed difficulty of articulation occurring only when she was tired. In July, 1899, deglutition and mastication became affected and she was unable to close her eyes fully. There was no history of sore throat. At the present time she showed paresis of the orbicularis oculi and oris, of the tongue, pharynx, and soft palate, but of no other muscles. The eyelids could not be completely closed and there was no resistance to passive elevation of the upper lids. There was no ptosis or paralysis of the ocular muscles, intrinsic or extrinsic. The optic discs were normal. The mouth was flabby and the labial fissure was widened. She could not whistle or blow out a candle and had difficulty in emptying a spoon with her lips. Food collected in the right side of her cheek and she had some loss of control over the movements of the tongue during the first act of deglutition. The tongue could not be curled transversely, thus demonstrating the association between the action of the lingual muscle and the orbicularis oris. The movement of the soft palate was deficient. Fluids regurgitated through the nose and she choked in trying to swallow solids. The voice was nasal and the explosive labials B P and gutturals were indistinctly sounded. The vocal cords acted normally. All the symptoms varied from day to day in degree and were much more pronounced after fatigue or using the voice. She could swallow and speak well in the early morning after a night's rest. The only other symptom was occasional weakness of the fingers of the right hand which prevented her from sewing. The case was held to belong to the class called by Strümpell "asthenic bulbar paralysis." Patients suffering from similar symptoms were apt to die suddenly from respiratory failure, but hitherto no pathological changes had been found after death, thus supporting the view that a toxic influence was at work in the bulbar centres rather than a degeneration of the nuclei or the peripheral nerves. The patient had improved considerably under treatment by rest and the administration of strychnia.

Dr. C. E. BEEVOR showed a case of Paralysis of the Seventh, Eighth, Ninth, Tenth, and Eleventh Cranial Nerves in a woman, aged 32 years, who six years ago contracted syphilis. The present symptoms had come on during the last two and a half years, most of them within six months. The symptoms now present consisted of right optic neuritis (partial), absolute deafness of the left ear, taste lost in the left side of the tongue front and back, complete left facial paralysis, including the platysma, paralysis of the soft palate (left side), difficulty in swallowing, some anæsthesia on the posterior wall of the pharynx, paralysis of the left vocal cord, wasting of the left side of the tongue, with fibrillar tremors and protrusion to the left, the left sterno-mastoid completely and the left trapezius partially paralysed. None of the paralysed muscles reacted to faradaism. The most probable diagnosis was syphilitic meningitis affecting the nerves of the medulla.

Dr. J. S. COLLIER (for Dr. HUGHLINGS JACKSON) showed a case of Unilateral Lesion of the Pons. The patient was a man, aged 40 years, with no pathological history, whose illness began gradually with giddiness, deafness of the left ear, alteration of speech, difficulty in guiding the left arm, diplopia, difficulty of swallowing and mastication, and loss of feeling on the left side of the face. There had been no headache, vomiting, or dysuria. The optic discs were pale and there was paralysis of the fifth, sixth, seventh, and eighth cranial nerves on the left side, with weakness of the ninth, tenth, and eleventh. He held his head in the right cerebellar position. There was a spastic condition of the right arm and leg, and the speech resembled that often met with in cases of disseminated sclerosis. Dr. Jackson had met with cases of that disease which had begun in that way.

Mr. A. E. BARKER showed a girl who first came to him 13 years ago with Macroglossia, when he removed a wedge-shaped portion of the organ, bringing the sides together. The case is recorded in vol. xli. of the Transactions of the Pathological Society. She had returned last year with recurrence, the growth this time being in the direction of the hard palate, and on this occasion he had removed a wedge-shaped piece in a horizontal plane, bringing the upper and lower flaps together. Sections of the first growth showed a preponderance of lympho-angiomatous tissue, but the recurrent growth was more of a nævoid character.

Mr. F. C. WALLIS showed the following cases:—1. A case of Tuberculous Disease of the Knee-joint in a child, aged three years, which was treated by division of the patella, free exposure of the joint, removal of the affected synovial membrane with scissors and spoon, and finally swabbing the whole surface with pure carbolic. The patella was united by silk-worm gut and the skin wound was closed except for a gauze drain which was removed after 24 hours. The child was now able to walk about and had a limited movement of the joint which was improving. Mr. Wallis mentioned another case of erasion and one of excision of the knee-joint, both treated with carbolic, and they had done well. 2. A case of Acute Infective Osteomyelitis in a child, aged 12 years, with necrosis of the whole of the shaft of the humerus. The large sequestrum was removed (this was shown with the patient). The periosteum was much thickened all round the sequestrum, forming a good scaffolding. The arm, which before the operation was useless, was rapidly regaining power, especially since massage had been begun. 3. A case of Osteitis and Periosteitis in a child, aged 11 years, which had been treated by cutting down on the tibia, elevating the periosteum, and cutting a deep groove through both the epiphysis and the diaphyses. Since the operation the pain had disappeared and the child could stand. The case was originally thought to be tuberculous.

EDINBURGH OBSTETRICAL SOCIETY.

Exhibition of Specimens.—Eclampsia.—Basilysis.—The Use of Levurine.

A MEETING of this society was held on Feb. 14th, Dr. J. W. BALLANTYNE, the Vice-President, being in the chair.

Professor A. R. SIMPSON showed: (1) A Hydatid Mole: (2) a bottle of Levurine; (3) the Head of a Child delivered by Basilysis; and (4) two Uteri Removed by Pan-hysterectomy for Fibroids.

Dr. J. W. BALLANTYNE showed: (1) A Fœtus with Absence of the Radii and Deformity of the Thumbs, which was the

third monstrosity with the mother out of six or seven pregnancies; (2) a Fœtus with Anencephaly; and (3) Photographs of Historical Teratological Phenomena.

Dr. KEPPIE PATERSON showed a Myxomatous Mole.

Dr. MACVIE read a paper on a case of Eclampsia having a Peculiar Puerperal History, with Observations on Coma. The patient was a woman of neurotic disposition and anticipated her labour with helpless timidity and dread. Her first labour was easy with a slow recovery. Her second labour was easy and she did well till the end of the first week when a gradual stupor set in, which deepened and became profound in the next few days. The pulse was slow and soft, the breathing was quiet and shallow with intermittent sighs, and the temperature was normal. The bowels acted fairly well with drugs. The urine was scanty and deposited urates, but was otherwise normal. The treatment was mainly nutritive and designed to keep the heart going. When death seemed imminent consciousness gradually returned and in a week the patient was well except for debility. She regained her strength but slowly. Her third labour was favourable, but on the seventh day she became listless and apathetic, her look became vacant, and stupor gradually intervened, though not so profound as in the previous puerperium. At her fourth confinement she was found to have œdema of the ankles and the urine on boiling deposited about one-half albumin. The presentation was by the face. The membranes were ruptured and the child was easily delivered by forceps under chloroform. Six hours afterwards a fit occurred, followed rapidly by eight or nine others, and in two hours she had become unconscious with stertorous and laboured breathing. Venesection was performed and about nine ounces of blood were withdrawn. Improvement in the breathing and colour of the patient was almost immediate and deglutition power returned. Hot water was given freely. Consciousness soon returned and steady progress occurred during the next few days. The urine then only contained a trace of albumin. She continued well for three or four days when apathy began, which gradually deepened into a profound stupor. From this she never rallied and death occurred on the tenth day of the puerperium. In discussing the case and the treatment of eclampsia Dr. Macvie advocated chloroform in the stage of convulsions to narcotise the brain centres and to allay peripheral irritation. He believed that the state of coma was mostly induced by the venous congestion of the brain during the tonic spasm of the chest in the convulsion. This stage was therefore best met by inhalation of oxygen and venesection. Elimination of the poison causing the fit was helped mainly by the administration of warm fluids, either by the mouth, subcutaneously, or by the rectum.—Professor SIMPSON, Dr. F. W. N. HAULTAIN, and Dr. FREELAND BARBOUR made remarks on the paper.

Professor A. R. SIMPSON read a paper on Basilysis. He said that improvements in the construction of the forceps and a better appreciation of the conditions under which turning, Cæsarean section, and symphysiotomy could be safely carried out had in recent years greatly restricted the group of cases in which the obstetrician felt called upon to deliver by cephalic embryotomy. There was still, however, a not inconsiderable field for the employment of embryotomy procedures, as might be gathered from the papers written on the subject. The basilyst was used first for perforating the cranial vault and it was then bored into the cranial base and broke it up. The chief drawback to the cranioclast was that in some cases it did not fracture enough of the base of the skull to allow of the perfectly easy extraction of the head. The point of the basilyst was conical, with a double-threaded screw thread on it. This was applied to the vault and by twisting the handle it was easily screwed through the bone; by pressing the blades of the handle a segment of the point was opened out and the perforation was enlarged in all directions. After washing out the brain the screw-point was applied to the base of the cranium, the sella turcica, or ethmoid, and these bones were broken up. The head then collapsed very readily. A fenestrated blade for application outside the skull could be locked on to the basilyst and extraction was thus made easier in difficult cases. The whole instrument had been recently improved and made much lighter. An illustrative case was given and the head was shown.—Dr. BALLANTYNE, Dr. BARBOUR, Dr. HAIG FERGUSON, Dr. FORDYCE, and Dr. HAULTAIN made remarks on the paper.

Professor SIMPSON read some Notes on the Use of Levurine. Levurine was a dried extract of beer yeast (*levures de bière*) which was prepared by Dr. Aragon and M. Couturieux of Paris. They were stimulated to the preparation of this drug by a paper on the use of barm in diabetes mellitus. Levurine had also been found to be of value in furunculosis. It was therefore not a new drug, but was the yeast of beer so prepared that it was concentrated in powder form. It was always fresh, constant in its action, and was prepared in an easily administrable form. It might be taken in beer or in aerated water, or in cachet form. The dose was a tea-spoonful three times daily until the desired effect—viz., arrest of suppuration or reduction of temperature—was attained. Dr. Aragon and M. Couturieux suggest that its effect was produced by counteracting a latent glycæmia or by acting as a germicide to streptococci and staphylococci or as an antagonist to their toxins. Professor Simpson reported a case of appendicitis where each time the temperature rose to 100° F. a dose of levurine brought it down to about normal. It also gave good results in a case of tuberculous ulceration and the drug was administered to a septic puerperal patient with evident advantage. It had also been stated to have been beneficial in furunculosis, tonsillitis, and pneumonia.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF ANATOMY AND PHYSIOLOGY.

Protamines and their Cleavage Products.—Model of Viscera.—Mucous Glands.—Epiphyses of Human Bones.—Form and Position of the Stomach.—Viscera of the Gibbon.

A MEETING of this section was held on Feb. 2nd, Professor W. H. THOMPSON, the President, being in the chair.

The PRESIDENT read a paper on Protamines and their Cleavage Products. Protamines, hitherto obtained only from the ripe milt of various species of fishes, are believed by Kossel to be the simplest proteids. On hydrolytic cleavage they yield mainly hexone bases—viz., arginine, with histidin and lysine in some cases. These bases have recently been shown to exist largely in antipeptone. It appeared desirable, therefore, that their physiological properties, as well as those of the protamines, should be examined. The experiments were performed on anæsthetised dogs in the Physiological Institute, Marburg, and yielded the following results. The protamines were found to be very poisonous, the maximum non-lethal dose being one-fifth of a gramme. Their effects in many ways resembled those of the albumoses; blood-pressure was rapidly and profoundly lowered, but with a moderate dose returned to normal in half an hour. Coagulation was greatly retarded and the number of leucocytes in circulation were largely reduced. These effects were also temporary. Respiration was peculiarly influenced; the movements were at first greatly accelerated and exaggerated; then came a gradual decline, ending in complete cessation. After a few seconds diaphragmatic respiration returned and gradually became deeper and deeper, the movements of the thoracic walls during this period being wholly passive. Subsequently (after the lapse of an hour or more) active thoracic respiratory movements reappeared and the function gradually became normal. Other muscles—viz., those of the trunk and limbs—were also temporarily paralysed. None of the cleavage products showed these effects, nor did a trace of residue, which splits off in addition to the hexone bases, during the process of hydrolysis. Histon, a substance obtained from lymphoid organs, which had considerable chemical resemblance to the protamines, produced almost identical physiological effects. Antipeptone had very little effect on blood-pressure and blood coagulation. It raised blood-pressure slightly and hastened coagulation. Arginine hastened blood coagulation, while its effect upon blood-pressure was practically *nil*—i.e., its effects coincided with those of antipeptone. These substances reduced enormously the number of leucocytes in the circulation, but the leucocytes reappeared in about three-quarters of an hour; they could not, therefore, have been destroyed nor have wandered out of the blood-vessels.—Professor COFFEY, Dr. WALTER SMITH, and Dr. DAWSON discussed the paper.

Dr. C. J. PATTEN, in the unavoidable absence of Professor Cunningham, exhibited for him a model of the Thoracic and Abdominal Viscera from behind which had been prepared primarily to exhibit the form and relations of the spleen.

Professor COFFEY showed sections which illustrated the Formation and Manner of Development of the small Racemose Glands of Mucous Membranes. The specimens were

taken from the œsophagus of snakes. The earlier stage was seen in the simple alveolus or sac opening without a duct on the surface.

Dr. KNOTT exhibited a large series of Human Bones, all of which presented non-united or partially united Epiphyses. The series illustrated the development of the limb bones, the pelvis, scapula, sternum, clavicle, metacarpals, metatarsals, phalanges, vertebræ, ribs, and a large number of cranial bones. Amongst the specially interesting items were an atlas which was obtained in process of ossification from at least nine centres and an ulna which presented a small epiphysis on top of the ordinary epiphysis for the upper end of the olecranon process, a centre of ossification which, up to this, seems to have completely escaped the notice of anatomists. When the elbow-joint was bent this supernumerary epiphysis presented a striking resemblance to a diminutive patella turned upside down.—Professor BIRMINGHAM said that many of Dr. Knott's series were of the greatest interest, particularly those of the atlas and ulna. He was not satisfied, however, that the additional centre for the olecranon was constant.

Professor BIRMINGHAM gave a lantern demonstration of the Form, Position, and Relations of the Stomach as seen in bodies which have been hardened by intravascular injections of formalin. The chief points upon which he dwelt were that the empty stomach was contracted, not collapsed, its pyloric portion resembling thick-walled small intestine; its cardiac portion was rounded but attenuated; its surfaces looking, the one up, the other down, and its long axis nearly horisontal. In this condition it rested on the "stomach bed," occupying only the lower part of the "stomach chamber," the upper part of this space being occupied by the great omentum and the transverse colon, which doubled up over the empty stomach and lay between it and the diaphragm. The large, flattened, and collapsed stomach, with anterior and posterior walls in contact, usually described and pictured, was not found in the hardened body. Three stages were recognised in passing from the empty to the distended condition. In the first the fundus and cardiac portions were expanded, the pyloric portion remained contracted, and the lesser curve sharply bent as in the empty state; in this stage the stomach resembled a Florence flask, strongly bent at the junction of the neck and the body. In the second stage the cardiac portion was further expanded, and the pyloric portion opened out, but the junction between the two was distinctly marked. In the third stage there was an enlargement of all the axes of the organ; the distinction between pyloric and cardiac parts was almost lost; the pylorus was carried an inch or two to the left of the middle line and the antrum pylori was developed. But in all these changes there was no rotation around the long axis of the organ, with a raising up of the great curvature, &c., as commonly described. The distended stomach lay obliquely, its long axis running from the fundus, not vertically, as had been taught in recent times, but inwards and downwards, making an angle of from 40° to 45° with both the horizontal and mesial planes. In a female subject with a very constricted waist the stomach lay almost vertically on the left side of the vertebral column. Regarding the question of the existence of a valve at the cardiac orifice, he thought that little reliance could be placed on observations made on dried specimens. The return of food from the stomach into the œsophagus would be amply guarded against by the contraction of the muscular fibres of the œsophagus and the crura of the diaphragm, as illustrated by a specimen exhibited.—Dr. PATTEN and Mr. TAYLOR discussed the paper.

Dr. PATTEN brought forward a communication dealing with the form and position of the Thoracic and Abdominal Organs of the Gibbon. The lungs, heart, stomach, and spleen very closely resembled those of the human subject, as one might anticipate in such a highly developed anthropomorphous ape. The specimen was first hardened in formalin to ensure the contour of the viscera.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this institution was held on Feb. 22nd, Mr. W. T. Thomas, the Vice-President, being in the chair.—Mr. R. W. Murray showed a patient upon whom he had performed the operation of Tarsectomy for Double Club Foot.—Dr. W. Alexander related two cases in which he had removed Foreign Bodies from Viscera and showed specimens of these bodies—(1) pieces of coal and pebbles removed from the vagina; and (2) a piece of slate pencil removed from the male urethra.—Mr. Rushton Parker read a paper on Recent Operations on the Stomach, comprising 15 cases, of which eight occurred in the last six months and 12 in the year. Four of the operations were gastrostomies in men for carcinoma of the œsophagus, the operation being that known by the names of Hahn, Frank, and Albert. Two of the patients died within six months from acute phthisis, one in six days from bronchitis, and one in three months suddenly from syncope. He considered the procedure in suitably selected cases of value, but probably it was the least satisfactory of the temporary operations on the stomach. Four were gastro-enterostomies, three in men and one in a woman. The symptoms in all of the cases pointed to carcinoma, and although a tumour was felt only in two cases, in all a growth was found which was either too firmly fixed or surrounded by secondary deposit to permit of removal. Two of the patients were still doing well; the others were getting worse; in one the tumour was increasing and there was undoubtedly cancer, whilst in the others no microscopical verification had been made, and between carcinoma and gumma there was no means of being certain in the examination by eye and hand alone. The operations were well borne and the healing was rapid. No adventitious appliances were used. The nearest piece of jejunum was attached to the lower part of the stomach, an incision three inches in length being made in the axis of each viscus, and continuous silk sutures being used, one set through the mucous membrane and another through the peritoneum. The operation quickly admitted of satisfactory feeding, and although it was only required for temporary purposes it might now and then give permanent relief in the event of suspected carcinoma proving to be non-malignant. Two cases of excision were shown, one being that of a woman, aged 37 years, for malignant disease (ascertained microscopically) to the left of the pylorus who was still in good health and without any sign of recurrence after two years, and the other that of a man, aged 49 years, upon whom pylorectomy was performed a year previously for a tumour, which was thought to be malignant, but which at the operation was regarded as gummatous and which proved microscopically to be so. Three cases of pyloroplasty were discussed, two for contracted pylorus due to gastric ulcer and the other for ulceration (probably syphilitic) contracting the right half of the stomach. Two patients were shown after perforation of gastric ulcer. One was a chronic perforation with limiting adhesions to the liver necessitating complete section of the stomach near the cardiac end before suturing and the other was a perforation operated upon within six hours of the accident; hour-glass contraction of the stomach existed to the diameter of an inch, with the perforation in front of it. Free incision of the contraction right and left was made, the edges of the perforation were cut away, and the wound in the stomach was drawn together end to end and separated in the middle as in pyloroplasty. Both of the patients were in good health.—Mr. F. T. Paul agreed that Frank's modification of Hahn's operation of gastrostomy was the best, but unless a diverticulum of from two inches to two and a half inches in length could be withdrawn to form the fistulous passage in the abdominal wall it was better to do Senn's operation, which he thought the more efficient but not so easily recovered from as Frank's. He had ceased to use all mechanical appliances except Murphy's button, and this he believed might generally be dispensed with. In gastro-enterostomy he considered there was a danger of the intestinal juices escaping into the stomach and of the anastomosis proving only temporary; the former trouble was more common in the posterior operation and was rarely met with when the opening was made in front. This operation could not compare with either pylorectomy or pyloroplasty in the benefit afforded to the patient. Pylorectomy was never likely to be a frequent method of operation in cancer of the pylorus, owing to the fact that by the time the diagnosis was made the extent of the growth, fixation, &c., might render it unfeasable. Pyloroplasty had given him the best results in practice. With reference to the suture of perforated gastric ulcer he considered that drying out the peritoneal cavity was better than flushing. He always washed viscera that were withdrawn from the abdomen, but he limited the internal flushing to localised septic tracts that were isolated by adhesions or otherwise.—Mr. Robert Jones referred to a patient with a

Large Nodular Mass at the Pylorus which was so fixed that after opening the abdomen pylorectomy was considered undesirable; now, three years later, the patient was nearly well and the tumour had disappeared. This was of interest in view of reported cases of gastro-enterostomy for malignant disease when years had passed and the patient lived. A microscopic examination was necessary before malignancy could be pronounced.—Mr. W. Thelwall Thomas drew attention to the unsatisfactory state of our knowledge as regarded the pathology of the stomach, two of the cases referred to in the paper being due to syphilis—a cause rarely mentioned.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on Feb. 16th, Dr. Franklin Parsons, the President, being in the chair.—Dr. Hope, medical officer of health of Liverpool, read a paper on the Housing of the Working Classes in Liverpool, illustrated by a large number of coloured plans, sections, and elevations. The problem of the housing of these classes, including the skilled artizans, the unskilled labourers, and the "submerged tenth," was one, he said, which at the present time the sanitary authorities of every large town in Europe and America had to face. It was rendered the more difficult by the facts that a large proportion of these men, as dock labourers, market porters, and others, must live near their work and that the greater part of the houses occupied by them were erected before any building regulations came into existence, massed together without open spaces or sanitary conveniences and falling into decay. The area covered by these might be, and often had been, cleared, but the substitution of sanitary dwellings fulfilling present-day requirements, with open spaces, baths, and wash-houses, &c., at rentals such as the classes in question could afford was no easy matter. It was worse than useless to attempt to provide decent accommodation for the idle, drunken, and criminal class; their dispersal was best for themselves and for the community: but few places could show such satisfactory results from the improvement of the dwellings of the poor as could Liverpool, to which city was due the honour of having been the first to initiate legislation in this direction. During the last 15 years nearly 4500 "court houses" had been demolished, their sites having been covered by buildings such as he was about to describe; but there still remained over 3000, more than three-fourths of which were in the courts, the rest facing the streets, but back to back with the former. The width of the courts was on an average eight feet and of the approaches from the street from two to three feet; each court contained from eight to ten houses, of three rooms one above the other, each reached by stairs or ladder from the one below, all back to back and side to side, without any sanitary conveniences whatever; water-closets, used in common, were placed at one end of the court and dust bins at the other, the water-supply being from a hydrant in the middle. It was in such areas that fevers were endemic, that epidemics of cholera and typhus fever did havoc, and that notwithstanding the palliative efforts of the authorities, scavenging twice daily, unlimited water-supply, prompt removal of the sick, and practicable prevention of overcrowding, the (crude) death-rate ranged from 40 to 60, even reaching at times 75, per 1000. These three-roomed houses being so numerous, and their insanitary character not recognised, no attempts were made until recently to put up cottages with fewer than four to five or six rooms except that from time to time since 1863 three- and four-storeyed blocks had been erected by private enterprise; but while each tenement was beyond the needs and means of the very poor the owners were of opinion that the rentals of from 1*s.* 3*d.* to 1*s.* 6*d.* per room did not give a return for the capital invested. Those erected by the corporation dated from 1868, when six large blocks, from three to five storeys in height, each containing four-, three-, and two-roomed tenements, were put up and let at about 1*s.* 5*d.* per room, and included Victoria-square, opened in 1885; Juvenal-dwellings, opened in 1895; and Arley-street and Gildart's-gardens, opened in 1897. They were controlled by a resident superintendent and an assistant, who also collected the rents, the management of the entire property being vested in sub-committees of the corporation. Dr. Hope gave full details of the numbers of tenements with one, two, and three or four rooms respectively, the rental of each, and the dimensions of the several rooms, as well as the returns of original cost and annual income and expenditure on each estate, which might be summed up by the statement that 90 three-roomed, 300 two-roomed, and 70 single-roomed tenements, at rents from 2*s.* to 3*s.* for the last, from 3*s.* to 5*s.* for the two-roomed, and from 4*s.* 6*d.* to 5*s.* 6*d.* for the largest, gave a net profit of from 2½ to 4½ per cent. on the outlay. Another property was in course of development to comprise 132 and ultimately 182 tenements, mostly two-roomed, but in some respects an improvement on those already described, for while they were provided with water-closets on the landings, one to each two or three families, every one of the new tenements would have its own, and hot water would be laid on to the sinks for which 6*d.* per week would be added to the rent, gas would be supplied through automatic meters, and provision made for storage of fuel and of food in a locker ventilated from the outer air. There would be a large recreation and reading room for the tenants.—Mr. Shirley Murphy, referring to Dr. Hope's statement that the death-rate in the new buildings did not exceed 21 or 22, remarked that the death-rate was determined far more by the habits of the occupants than by the sanitary conditions of the house. Water-closets within the dwelling, though harmless in themselves, might be dangerous nuisances if dirty and neglected or out of repair.—Dr. E. F. Willoughby deprecated the position of the water-closets in some of Dr. Hope's plans in the interior of a small tenement, and he also objected to any arrangement that necessitated crossing a backyard at all hours and in all weathers. He strongly recommended an arrangement adopted in some blocks of placing the closets in pairs, one above the other, from the ground floor to the topmost storey, one on each side of an addition built out in the rear.—Dr. Bulstrode, Dr. Newsholme, and the President also took part in the discussion.

BRITISH ORTHOPÆDIC SOCIETY.—A meeting of this society was held at the City Orthopædic Hospital, London, on Feb. 17th.—Mr. G. Chisholm Williams showed cases of (1) Ganglion of the Extensor Tendons of the Foot; (2) cases of Caries of Dorsal Vertebræ; and (3) Severe Hallux Valgus with Hammer-toes.—Mr. Muirhead Little showed a boy, aged 10 years, with Stiff Shoulder probably due to Tuberculosis. There was a history of injury. When first seen nine months ago the humerus was firmly fixed on the scapula; its head was slightly displaced upwards and inwards. There was no swelling or sign of local inflammation. Under an anæsthetic the humerus could be easily moved on the scapula through about 90° of abduction. Rotation was very limited. There was a roughness in the movement of the joint. The other shoulder-joint allowed an unusual degree of mobility, so that the boy could turn his olecranon to the front. Both elbow-joints were normal except for slight hyper-extension.—Mr. John Poland showed a skiagram of a case of Hallux Varus, probably of paralytic origin. He had replaced the bones after dividing the tendon of the abductor pollicis and internal lateral ligament.—Mr. Jackson Clarke read a paper introducing a discussion on Hallux Valgus and Varus and Analogous Deformities, which is published at p. 609 of our present issue.—Mr. John Poland referred to the skiagram he had previously shown of a case of hallux varus. He now showed a skiagram of a remarkable congenital case. The condition was not alluded to in books. There was great developmental abnormality and the second phalanx was completely displaced to the inner side of the first. As suggested by Mr. Tubby, it was very probably a congenital dislocation analogous to congenital dislocation of the hip. As regarded hallux valgus there was a class of cases of great interest of which nothing or little had been said in the text-books. These cases were those of children from 14 to 15 years of age who had not worn tight or narrow-toed boots. He had operated on many such.—Dr. Robert Jones said that he preferred to treat the subject from a clinical rather than a pathological standpoint. He thought that the extensor of the great toe played a large part in producing and maintaining hallux valgus. He was in the habit of dividing or of excising an inch of the tendon. The best treatment in pronounced cases was excision of the head of the first metatarsal bone, but many patients would not consent to operation. These could be successfully treated by gradual mechanical correction if they chose to undergo the pain and trouble. There was no need to apply any apparatus in the day time. In excising the head of the metatarsal bone it was most important to remove enough bone. He had seen a boy, aged 14 years, with well-marked hallux valgus, yet this boy had never worn boots or shoes; he sold newspapers in the streets of

Liverpool. Mr. Jones had found that osteotomy of the shaft of the metatarsal bone was useless.—Mr. Tubby agreed with Mr. Jackson Clarke as to the osteo-arthritic nature of the deformity, but he would say that not merely 50 but 90 per cent. of the cases were due to rheumatoid arthritis, which he believed was a dyscrasia, apt to fall upon any joint which happened to be exposed to pressure or irritation. If enough bone was removed there was no need to divide the extensor proprius pollicis.—Mr. Muirhead Little referred to the dislocation of the sesamoid bones which occurred in hallux valgus. These showed plainly in skiagrams on the first inter-osseous space and had been removed by at least one surgeon as the probable cause of symptoms. There must be thousands of cases of hallux valgus which produced no symptoms unless arthritis supervened or was the original cause. Toe-posts were useless. He suggested that the cases in young people described by Mr. Poland were analogous to hammer-toe and were due to defective growth of the external lateral ligament as compared to the bones.—Mr. Keetley said that he thought that one broad line of treatment by excision of the head of the metatarsal bone was the best. He had found that wedge osteotomy was sometimes effective. He had never succeeded in curing any case by any mechanical appliance, though he had given many cases a very fair trial. He thought that there were two classes of cases—those associated with flat foot and (the great majority) those caused by improper boots. He did not believe—apart from rickets—that hallux valgus affected people who had never worn boots.—Dr. Blagg said that there were three classes of cases, namely—(1) congenital; (2) due to rheumatoid arthritis; and (3) due to tight boots. When he was a student he had seen operations of osteotomy and the immediate results seemed excellent, but when he got into practice he found that the trouble recurred after osteotomy and excision of the head of the bone had to be performed.—Mr. Noble Smith said that in the slighter cases much might be done by persuading the patients to wear proper boots.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on Feb. 20th, Dr. Judson S. Bury, the President, being in the chair.—The President showed a case of Idiopathic Muscular Atrophy and a case of Unilateral Paralysis of the Serratus Magnus.—Dr. A. Wahltuch showed two patients:—1. A girl, aged 10 years, suffering for 12 months from Hemichorea of the Right Side, who developed during the early stages of the illness an inequality in the pupils of the eyes, the left being enlarged and slower in contraction than the right. The vision in both eyes was perfect, though there was a slight astigmatism in the right. She attended as an outpatient at the Hulme Dispensary and was treated twice a week by massage and was now considerably improved, the twitchings being very rare and slight. 2. A girl, aged three years, suffering from Congenital Infantile Paralysis in the right leg and forearm; the supinators and extensors of the forearm and the peroneus longus were chiefly affected. She was brought to the Hulme Dispensary in August, 1899, the mother stating that the child had never been able to walk. Treatment by massage and electricity improved so far that she could now walk, run, and extend the fingers, though supination was still difficult.—Dr. W. Milligan mentioned the case of a patient who suffered from chronic Suppurative Middle-ear Disease complicated with extradural abscess and lateral sinus thrombosis and upon whom he had operated with a successful result. The patient, who had suffered for many years from suppurative middle-ear disease, suddenly developed acute symptoms—viz., pain in the head, high temperature, rigors, nausea, &c. Three weeks after the onset of the symptoms and when the patient was suffering from profound septic poisoning operation was performed. A large extradural abscess was opened and drained; the lateral sinus which was found ulcerated through and thrombosed at the distal end was freely scraped and packed with gauze. A second deep-seated cervical abscess round the jugular vein was also opened and drained, the vein itself being tied and divided. Localised pneumonia developed after the operation, probably due to a pulmonary infarct. The patient, however, finally made a good recovery.—Dr. Milligan also showed a patient upon whom the Stacke operation had been performed for Chronic Mastoid Disease with satisfactory results and made some remarks upon the rationale of the operation and the methods by which the most rapid healing could be secured.—Dr. W. E. Fothergill and Dr. J. W. Stenhouse described the case of a woman, aged 32 years, who, before completing the seventh month of her first pregnancy, developed Excessive Swelling of the Legs and Body which extended up to the lower ribs. The urine turned solid on boiling and contained a quantity of bile. About one-third of a pint was passed per diem. The liver was tender and was at first increased in size. In spite of active treatment the patient became worse, fluid collected in the abdomen, and the liver dulness became reduced to two and a half inches. The stools were absolutely without chyle. Labour was induced as a last resort and she rapidly improved thereafter. In less than a month her urine was copious and contained a normal amount of urea, whilst there was no bile in it, and only 0·1 per cent. of albumin. The liver had resumed its normal size, the action of the bowels was correct, and every trace of œdema had disappeared. The case was brought forward as an example of one of the forms in which hepatic toxæmia occurred during pregnancy. Poisons probably derived from the alimentary canal, and which should be destroyed by the liver, were, through failure of the functions of that organ, allowed to remain in the circulation. The kidneys also failed to excrete the poison which produced extreme renal irritation. Other manifestations of auto-intoxication during pregnancy were mentioned briefly.—Mr. J. E. Platt showed a patient, a blacksmith, aged 41 years, upon whom he had operated for aneurysmal varix of the brachial artery and median basilic vein and partial division of the median nerve. 14 months previously the man had received a small, punctured wound immediately below the bend of the elbow. Two weeks later he had been subjected to operation, and a piece of steel, three-quarters of an inch in length, had been found embedded in the brachial artery near its bifurcation. The median nerve had been found to be divided for the inner three-fourths of its extent. The brachial, radial, and ulnar arteries and the median basilic vein had been ligatured and the nerve sutured. Recovery of the function of the muscles supplied by the median nerve had subsequently progressed slowly but surely and was almost complete at the time the patient was exhibited. Some remarks were made upon the treatment of aneurysmal varix and upon the period necessary for recovery after division of motor nerves.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—A meeting of this society was held at the Guildhall, Windsor, on Feb. 21st, the President, Mr. W. B. Holderness, J.P., occupying the chair.—Mr. Noble Smith gave a demonstration of some Interesting Surgical Cases (upwards of 13 in number) illustrated by Casts, Radiographs, Models, and Photographs. The first case was one of Pott's fracture. Nine months after the accident the patient was hardly able to get about. A radiograph showed the foot to be so much displaced outwards that the weight of the body was transmitted through the centre of the tibia and impinged upon the inner edge of the astragalus, thus pushing the foot towards a valgus position. The fibula, which had been fractured diagonally and had united with much thickening, was chiselled through and the tendo-Achillis was divided, whereupon the foot could be immediately placed in a better position. The aching pain previously felt was at once relieved and at the end of six weeks the patient was able to walk about far more comfortably than before the operation. The second and fourth cases were examples of supposed bow-leg. Mr. Noble Smith, however, employed radiography which clearly showed fractures of the tibia one and a half inches above the ankle-joint. These were cut down upon and the bone was straightened, the patients making good recoveries. The fifth case was one of dislocation of cervical vertebræ. A lady sustained a fall of 80 feet down some rocks in the island of Sark. After some weeks' rest she began to get about again and then suffered from pain and stiffness in her neck. Attacks of giddiness likewise occurred and so affected her that she would suddenly fall down and especially on placing her hands upon her head in attempting to dress her hair. On examination Mr. Noble Smith detected an angular deformity between the fifth and sixth cervical spines and a radiograph clearly indicated a partial displacement between these vertebræ. The patient was placed under ether and firm extension made upon the head. Some adhesions were first felt to give way and after more force had been applied a slight gliding movement was felt in the neck. It was then found that the vertebra occupied their natural position. The acute symptoms shortly disappeared and the

patient was now practically quite well. Mr. Noble Smith quoted also the case of a woman who, whilst sleeping with her arm thrown over the back of a chair, suddenly started up and "ricked" her neck. A similar luxation had taken place. A fortnight later he lifted up the head to a considerable degree and suddenly imparting a lateral gliding movement a distinct "click" was heard and the patient was instantly relieved. Among other cases described were four of knock-knee, three of coxa vara, and one of marked deformity in the lower limbs, probably due to fracture in early childhood. Referring to the subject of club-foot Mr. Noble Smith said that he and his colleagues at the City Orthopædic Hospital were unanimously opposed to severe osteotomies except in cases accompanied by great bony deformity. They strongly disapproved of Phelps's operation in which all the soft parts were cut through down to the bone, the resulting gap, sometimes two inches in width, being stuffed with gauze. A disastrous example of this procedure was mentioned in which necrosis of bone and other troubles occurred, and this was contrasted with a severe case of club-foot (casts shown) treated with gradual pressure by small iron splints and division of contracted tendons. It was of the first importance to overcome the inversion before dividing the tendo-Achillis. For spinal curvature Chance's splint had the great merit of stimulating the development of the back muscles (photographs shown). He deprecated Calot's operation, which had been attended with no small mortality and of which he had seen some lamentable examples.

MIDLAND MEDICAL SOCIETY.—A meeting of this society was held on Feb. 7th at the Medical Institute, Birmingham, Dr. Rickards, the President, being in the chair.—Mr. Gilbert Barling showed a Kidney removed for Calculous Pyonephritis by lumbar nephrectomy from a woman, aged 49 years. The patient had had symptoms for about 12 months, during which time she had suffered from severe attacks of pain in the right side, from frequency of micturition, and from a swelling which had gradually increased in size. At the time of operation the kidney formed a tumour reaching mesially to within an inch of the umbilicus, backwards into the loin, downwards into the iliac fossa, and upwards under the ribs. The kidney was separated from its surroundings with great difficulty, the peritoneum being widely torn during the process of separation, and at the lower end of the organ a piece was torn out at the junction of the internal, external, and common iliac veins. The hæmorrhage from the torn veins was small and easily controlled by ligature of the three veins. A good recovery followed with practically no œdema of the right lower extremity. Examination of the kidney showed an abscess cavity holding about four ounces of pus and other tiny points of suppuration in the organ. A calculus was fixed in the pelvis and there was a good deal of atrophy of the renal substance. Though some renal tubules and glomeruli still existed the bulk of the kidney tissue was replaced by fat. There was some interstitial and parenchymatous nephritis, but casts were not found before the operation, the explanation possibly being that the ureter was blocked. The excretion of urea before the operation was about 300 grains and this had remained pretty constant since the operation.—Dr. Douglas Stanley showed a boy suffering from Favus and remarked on the rarity of the disease in the Midlands.—Mr. Chavasse showed a Sacculated Aneursym removed from a man, aged 41 years, who had suffered from syphilis; it was of the size of a large orange and was situated in the upper part of the abdominal aorta. The only symptoms present during life were attacks of pain resembling those of renal colic and limited to the left side. Rupture of the sac had taken place posteriorly and extravasation into the substance of the left psoas muscle caused a large sub-peritoneal hæmatoma. Erosion of the bodies of the last two dorsal and upper two lumbar vertebræ existed. A slight pouch was also found at the extreme convexity of the arch of the thoracic aorta.—Mr. Haslam showed a Tumour of the size of a walnut that he had successfully removed from the left ulnar nerve in the middle of the arm of a patient, aged 38 years. The tumour had been growing for eight years and consisted centrally of blood-clot and around this a layer of angiomatous tissue.—Mr. Chavasse showed a Large Hydronephrotic Cyst which he had successfully removed by abdominal nephrectomy from a boy, aged 11 years. It was apparently congenital (the abdomen having distended from birth) and contained five pints 12 ounces of clear straw-coloured fluid, which chemical analysis showed to contain urea, uric acid, and traces of albumin.—Dr. Murray read a paper on Chronic Brass Poisoning.

PLAISTOW AND CANNING TOWN MEDICAL SOCIETY.—At a meeting of this society held on Feb. 22nd at the Public Hall, Canning Town, Dr. J. Biernacki gave an address on Diphtheria. After a reference to the modes of infection a clinical description of a typical fatal case was given with a chart in which were shown the falling temperature, the progressing diminution of urine, and the blood pressure curve. It was stated, as the result of numerous investigations with the Hill-Barnard pocket sphygmometer, that a fall in pressure invariably accompanied the disease, slight at the outset, but becoming extreme in fatal cases. The initial drop was attributed to relaxation of the blood-vessels from the direct action of the toxin, an effect anticipated from the recent experimental work of Dr. T. G. Brodie; while heart failure was added as a more potent factor in the final depression. This speaker expressed the conviction that all the symptoms of the disease were to be referred to the diminution in blood-pressure—pallor with coldness of the surface, sickness, compressibility, and final disappearance of the pulse, a reduced temperature, restlessness (jactitation), and especially oliguria, going on to suppression, which locked up, not only the toxin, but also the physiological poisons.—A discussion followed in which Mr. A. E. Kennedy, Mr. Percy Rose, Mr. Stewart Boyd, Dr. Beaumont, and others took part.

Reviews and Notices of Books.

The Principles of Treatment and their Applications in Practical Medicine. By J. MITCHELL BRUCE, M.A. Aberd., M.D., F.R.C.P. Lond., Physician and Lecturer on the Principles and Practice of Medicine, Charing-cross Hospital; Consulting Physician to the Hospital for Consumption, Brompton; Examiner in Medicine, University of Cambridge. Edinburgh and London: Young J. Pentland. 1899. Pp. 614. Price 16*s*.

WE have rarely perused a book with more satisfaction than we have Dr. Mitchell Bruce's work on "The Principles of Treatment." A treatise of this nature was wanted and practitioners and students will find a study of it most valuable. The usual manner in which therapeutics are taught is unsatisfactory; in the majority of cases treatment appears to be purely symptomatic or empirical. Long dissertations are given by the bedside on the etiology, pathology, and symptoms of a disease, whilst the treatment is usually dismissed in a few words. There are, fortunately, teachers exceptional in this respect, but we believe we are correct in the general terms in which we have spoken. Dr. Bruce alludes to this defect in his preface and comments on the immense difficulties which students experience when they are called upon to show an intelligent acquaintance with treatment. They may write a prescription with little hesitation, but as a rule they cannot give a rational account of the principles on which they have planned it, apparently being ignorant of the principles which control successful and rational therapeutics. The work is planned on excellent lines. It starts by assuming no therapeutical laws, but proceeds to find them in the familiar facts of etiology, pathological anatomy, and the clinical characters of disease. These are carefully examined for the elementary principles of treatment, and in the course of the inquiry the reader is taught how he may himself employ his observations as guides to practice. This is the only way in which a truly correct line of treatment can be mapped out and one which will abolish routine and frequently harmful methods of the use of drugs.

Dr. Bruce remarks in his preface that the principles of treatment are difficult to discuss, and still more difficult or impossible to appreciate, without illustrations of them in connexion with individual diseases. Throughout the first part of the work this proposition is respected, and no

statements of principles are made without reference to some familiar instances in which they apply, but in the second part of the work a large number of illustrations are given, exemplifying the principles enunciated in the first part.

The principles of treatment founded on etiology are first discussed, and a distinction is made between efficient causes on the one hand and predisposing and determining circumstances on the other. Micro-organisms, animal parasites, poisons, unsuitable food, traumata, mechanical strain, cold and heat, all receive due attention, "indications for treatment" based upon the various etiological factors being considered at length.

"Principles of Treatment Founded on Pathology" naturally form an important part of this work. It is refreshing to read the paragraphs relating to inflammation, ulceration, necrosis, degeneration, hypertrophy, and atrophy, these subjects being considered from a therapeutical point of view. We are shown how the result of these processes as a whole may be either successful or otherwise. Success means regeneration and recuperation, and the final result of these is recovery, complete or incomplete. In too many instances, however, the different processes of spontaneous recovery entirely fail. Instantly, suddenly, or slowly, as the case may be, the pathogenetic influence and its effects overwhelm or otherwise overcome the various provisions for recovery with which the body is furnished. The result is death—swift, rapid, or slow; but unless the pathogenetic agent be instantaneous or crushing the body makes an effort or attempt at reaction or recovery. It is further argued that whilst natural resistance continues and can be advantageously aided and controlled the prominent feature of pathology from the therapeutist's point of view is recovery in the form of both anatomical and physiological repair and associated processes. These may be effected by structures and vital functions over which we have abundant control. Our opportunities of rational interference are thus proved and the treatment of pathological processes is fully justified.

The chapters on "Principles of Treatment Founded on the Clinical Characters of Disease" are equally interesting. It is quite rightly insisted that the appreciation of the importance of the indication for so-called expectant treatment in acute diseases (particularly such as are of limited duration) constitutes a turning-point in the history of medicine, and scarcely less valuable are the indications for the prevention and treatment of complications and sequelæ and for the thorough establishment of convalescence which an improved knowledge of these parts of the natural history of disease has enabled us to reach.

The first part of the book terminates with chapters on "Principles of Treatment Founded on the Personal Factor in Disease," "The Proper Relation of Treatment to Disease," "Means of Treatment," and "The Art of Treatment." The second portion of the book will be found most useful for reference. It is headed "Illustrations of the Principles of Treatment" and, as its title indicates, it shows the method of applying the principles laid down in the first part to the treatment of diseases. Separate chapters are devoted to different diseases or groups of diseases and the information imparted will be found most valuable by practitioners who desire to ascertain the lines of treatment which they should adopt in any particular case.

We can strongly recommend the book to our readers and we offer our congratulations to the author on the excellent work which he has produced.

Text-book on Palæontology. By KARL VON ZITTEL. Translated by C. R. EASTMAN, Ph.D., Harvard College. London: Macmillan and Co. 1900. Pp. viii. & 706. Price 25*s.* net.

THIS is a translation of Dr. Zittel's smaller work upon palæontology and will be completed with the issue of Vol. II. The present volume, of large dimensions and most copiously illustrated, deals with the invertebrates only; the concluding volume will have for its subject the more important group of vertebrates. More important, that is to say, from the point of view of palæontology; for with abundant and often well-preserved bones to handle it is possible to come to reasonable conclusions about the relations of extinct creatures to their living allies. With invertebrates, on the other hand, there is, save in rare cases, little left but their shells or spines and other hard bits which, though useful enough, are often precisely those regions of the creature with which we could best dispense. The study of invertebrate palæontology is productive of annoyance for this very reason. Some delightfully "aberrant" mollusc or worm has left only miserable evidence of itself in the shape of a damaged shell or even a mere cast—just its imprint upon the muddy flat where death overtook it or the waves left it. The palæontologist wonders, and unfortunately is compelled to continue wondering, whether some of those remarkably persistent types of life, such as the brachiopod lingula, concealed under an identical exterior an interior diverse from their descendants of to-day, or whether they are permeated through and through by a conservatism which has hardly a parallel in the animal world. Unlike ourselves, the author of the volume before us commence logically by defining what a fossil is before proceeding to speak of fossils and their occurrence. The common idea is probably of some animal or plant turned to stone. Dr. Zittel naturally does not sanction so loose and inaccurate a notion as this; he would, and very properly, define fossils as "all remains or traces of plants and animals which have lived before the beginning of the present geological period and have become preserved in the rocks." This broad definition will include the frozen carcasses of mammoths exhumed in Siberia, whose flesh formed an admirable though rather expensive diet for the dogs who assisted in the disinterment, no less than the most stony of Dura Den red sandstone fishes. The line, however, is a little hard to draw with accuracy and decision. We rather gather that the author would not allow the skull of the Canstadt man to be a fossil, since he denies this distinction to the peat-entombed remains of the dodo. This does not appear to be quite logical. The dodo is, for all practical purposes, as effete as the trilobite, though it was undoubtedly, in quite recent times, seen alive by many, including John Evelyn. This, however, is a small criticism. The reader who is imperfectly acquainted with the subject will, on turning over the pages of this book, be struck with the fact that so many groups of animals are excessively abundant, while others are as rare, in the rocks and clays of the world. The author finds himself obliged to devote 260 pages to the consideration of the shellfish (mollusca), while he only needs 60 for the crustacea. The enormously hard and stony carapaces of many crabs would seem to lend themselves to preservation just as well as, if not indeed better than, the comparatively thin shells of many bivalve molluscs. The group of isopod crustaceans, including among living forms the familiar wood-louse, is dismissed in a little under one page; and yet this is not negligence or ignorance on the part of the author: in that exceedingly short space he has said what is to be said (on the lines adopted through the book) about that at present very large and widely-spread race of creatures. There must be some reasons, with which we do not seem to be acquainted at present, for the paucity of one race as fossils and the abundance of others. It is not, of course, surprising to find that fossil butterflies and moths occupy only half a page. These tender insects must crumble away directly after death; and, indeed, everyone knows that a dead butterfly is as rare as that proverbially rare creature a dead donkey. Generally speaking, the remains of terrestrial animals are scarcer in the rocks than those of aquatic animals.

And among aquatic animals those which formerly inhabited the sea are decidedly more abundant than fluviatile or lake-dwelling animals. This, of course, is natural and readily explicable. A land animal dying upon the land has but little chance of leaving its remains behind it in a state fit for interpretation by a palæontologist, whereas the marine crustacean or mollusc sinks into soft mud in many cases, and is rapidly entombed and preserved until future upheaval for the advantage of the student.

In considering the past history of fossil vertebrates and their relations to existing forms much has been done in tabulating the modifications of structure through which they have passed before arriving at that form which characterises them at present. Pedigrees of, in some cases, highly probable accuracy have been made out concerning the descent of such types as the horse and the camel. With invertebrates the general results are disappointing. The common sea urchins of our own coasts recede into the "infinite azure" of a most dim and palæozoic past. Yet these early urchins, different though they are in many particulars from their living representatives, have already got the same stony plates arranged with the same almost crystalline regularity. It is true that the ancient forms have more rows of plates on their "tests" than those which we can dredge off our coasts; but the veriest tyro would not hesitate for one second in assigning them to the same group. There is no hint afforded by the study of palæontology—of a kind that can be argued out with success—of any closer approximation of the primitive types to other allied forms of echinodermata, such as star-fishes or sea cucumbers. An echinus has been always definitely an echinus. There is here at least no limbo to which vague forms of intermediate characters can be profitably relegated.

The fact of the matter probably is that we do not and cannot go far back enough into time to obtain a glimpse of those early creatures which were the ancestors of what are now quite separate groups. The imperfection of the geological record about which so much has been said is no doubt also an imperfection of another kind than that usually meant when the phrase is used. That there are many hiatuses to be deeply deplored is true enough; but what is to be most regretted is that the beginning seems to be irrevocably lost. The gaps may be filled, for there are the rocks, and hammers are plentiful, but there is no known method of re-stratifying a crystalline and altered rock. In the echinoderms, which we have just been considering, but much more in the shellfish, the lack of plasticity in the outward form is remarkably noteworthy. The abundant figures which illustrate that section, as they do all the other sections, of the volume will show the very close likeness which the most ancient forms of molluscs bear to those actually living. The bivalve shell of the earliest times is often—save, of course, to the expert—a mere replica of that of forms which strew the beach at any seaside place. The innumerable æons through which the same type of defensive armature has been preserved is astounding. Their consideration affords a strong argument against a progressive evolution without the stimulation of natural selection. The shell once acquired proved, we may suppose, to be the best and least expensive form of protection during a life by no means so complicated as that of a terrestrial animal, and was therefore preserved without much alteration. On the other hand, it may, of course, be argued that the small changes, comparatively speaking, which have occurred cannot be due to anything like competition, since it is hard to understand how a slight alteration of engraved lines upon the shell could affect the well-being of its inhabitant.

Professor Zittel's book is not a book to be read through at once from cover to cover. It is really a work of reference and as that is very full. Though an abridgement of his more extensive work (which we should much like to see translated) it is quite full enough in those places where we have tested it. The translator has not acted only in that capacity. Dr. Eastman has, with the sanction of the author, "remodelled, enlarged," and generally brought up to date the whole work. In this he has been assisted by many eminent experts, chiefly in the United States. There is no doubt that he and his colleagues have performed a useful piece of work in producing this sufficiently full account of the zoology of extinct invertebrates.

LIBRARY TABLE.

Health Abroad: A Medical Handbook of Travel. Edited by EDMUND HOBHOUSE, M.D. Oxon. London: Smith, Elder, and Co. 1899.—We believe that this will be found to be an extremely useful book, not only to the ordinary traveller, for whom apparently it is intended, but also to the medical practitioner who may wish to supplement his often somewhat meagre knowledge of "foreign parts." The contents consist of a bibliography of very great interest and value, the works enumerated being numerous and well selected. There is a general introduction by the editor, very short and, of course, general, but still conveying many useful hints. Dr. Leigh Canney contributes the article on North Africa, which includes Egypt, Tunis, and Algiers. The article on Egypt is first, and due prominence is given to its peculiarly dry and fine winter climate, with guidance, prudent on the whole, as to the various places and their peculiarities. As to the route Dr. Canney has fallen into error in saying or implying that the P. and O. boats from Marseilles run to Alexandria. Every traveller must wish that they did. The article on South Africa is by Dr. Guillemard and that on Central Africa by Dr. Battersby. The former has, of course, a peculiar and painful interest at present. The editor writes on North America and the West Indies, Dr. Pennell on South America, the editor again on Australasia and on the Riviera, while Dr. Tidey contributes the article on Switzerland and Italy, and Dr. Simpson that on India. The articles all bear the impress of knowledge derived at first hand, and they have therefore a high degree of practical usefulness. We congratulate the editor on the idea of publishing a book of this kind and on the very successful manner in which he has accomplished the work.

Professions for Boys and How to Enter Them. By M. L. PECHELL and JAMES J. NOLAN. With a preface by the Most Reverend J. E. C. WELLDON, D.D. Second edition. London: Beeton and Co., Limited; Simpkin, Marshall, Hamilton, Kent and Co., Limited. Pp. 316. Price 3*s.* 6*d.*—The word "profession" is used somewhat loosely in this book, for the callings mentioned embrace nearly every known one, from the Navy, which begins the list, to the Church Missionary Society, which closes it. Curiously enough, two eminently pleasant callings are not considered—namely, the Diplomatic Service—although there is an article on Student Interpreters—and the various clerical posts to be gained in the Houses of Parliament. True, such posts are only for the few, but they are worth the winning. In the chapter upon Medicine and Dentistry there are some statements which are not quite clear. Thus, "the university degree implies an arts education; the diploma does not." An "arts education" may mean anything. All the examining bodies require candidates for degrees or diplomas in medicine to have passed certain examinations in arts, but the University of Oxford stands alone, we fancy, in demanding that candidates entering for her examinations in medicine should previously have taken a *degree* in arts. Trinity College, Dublin, however, will not confer a medical degree without an arts degree, but the arts course and the medical course together with examinations for each may be taken simultaneously. Otherwise the article

will be found useful to those desirous of entering what is possibly the most arduous profession of any, but one which, at the same time, has its prizes both in interesting work and in emoluments.

Jahresbericht über die Fortschritte auf dem Gebiete der Chirurgie. (*A Year-book of Progress in Surgery.*) Redigirt und herausgegeben von Professor Dr. HILDEBRAND in Berlin. III. Jahrgang, bericht über das Jahr 1897. Wiesbaden: Verlag von J. F. Bergmann. 1898. 8vo, pp. 1102. Price 25*s.*—This useful book, which may be obtained in Great Britain from Mr. Bauermeister of Glasgow, is the third issue. It contains *résumés* of all, or nearly all, articles on surgery which appeared throughout the world in the year 1897. When we noticed the previous volume we praised its conception and arrangement, and equal commendation is deserved by the present book. Some such work as this is well-nigh indispensable for a writer on any department of surgery who wishes to be aware of what has been written already on the subject. Two suggestions we should like to make. The first is that more differences in the type employed would render conspicuous names and subjects which have at present to be sought for carefully in a mass of text. The other suggestion is that a little more care should be exercised in revising the spelling of the personal names which occur. We are well aware of the difficulty there is in ensuring the accuracy of names, especially of foreign names, but a little revision will do much. Hardly any praise is too great for the general arrangement of the volume.

The Mechanics of Surgery, comprising Detailed Descriptions, Illustrations, and Lists of the Instruments, Appliances, and Furniture necessary in Modern Surgical Art. By CHARLES TRUAX. Chicago. 1899. Pp. 1024. Price $4.50.—This is an account of modern surgical instruments by one who is a member of a firm manufacturing instruments, but it is in no way a price list and the personal element is kept as much as possible in the background. There are so many instruments nowadays and so many patterns and forms of the same instrument that most medical men feel rather at sea when they wish to purchase some new appliance. This book is intended to assist them in their choice, and so far as we have seen they will not go far wrong if they follow the advice which this volume contains. There are, it is true, many small points on which our opinion does not quite coincide with the author's, but we have not discovered any instance in which the difference is of any real importance. The book contains, also, an account of trusses, of splints, and of artificial limbs. In his remarks on the fitting of artificial limbs to stumps the author does not attempt, like so many makers of these appliances, to dictate to the surgeon where he should amputate, but he explains the conditions which render one form of stump more convenient than another for the patient. The book should prove of real service to anyone who wishes to purchase an instrument with which he is not personally acquainted.

Cancer, Illustrated by 1000 Cases from the Registers of the Middlesex Hospital and by 50 Selected Cases of Cancer of the Breast, &c. By THOMAS WILLIAM NUNN, F.R.C.S.Eng., consulting surgeon to the Middlesex Hospital. London: H. J. Glaisher. 1899. Pp. 89. Price 2*s.* net.—This little book consists of two parts; in the first is given an account of the structure and life-history of carcinoma, in the second part are contained the notes of 53 cases of this form of tumour affecting the breast. When the connotation of a popular term is exactly equivalent to the connotation of its scientific representative there can be no objection to employing it even in scientific treatises; but when the popular term and the scientific are distinctly not equivalent the one to the other only confusion can arise from employing the popular expression. The word "cancer" amongst the public is employed to mean any growth which tends to shorten life; in Mr. Nunn's book it is used as equivalent to carcinoma, and though he would doubtlessly claim that the word is never used otherwise by medical men, yet it is distinctly not advisable to employ a word which is capable of this double meaning. The various questions relating to the disease, such as regional frequency and age liability, are somewhat briefly discussed. The cases are of interest and the 11 plates represent sufficiently accurately the microscopical appearances of sections of carcinomata.

A Manual of Pharmaceutical Testing. By BARNARD S. PROCTOR, F.I.C. Second edition. Published at the offices of the *Chemist and Druggist*. 1899. Pp. 186.—No one can dispute the excellence of the purpose of this volume. It is to instruct the pharmacist so that he may be able to test his chemicals occasionally to see that their quality is up to the required standard. The processes are, of course, familiar to those who make a special study of analytical chemistry, but the present volume is restricted in its application to the ordinary contents of the pharmacy. In this way the pharmacist is not burdened with a number of analytical details in regard either to manipulation or to method, but he will find just what he wants and sufficient to satisfy him as to the purity and strength of his drugs. The work is in accordance with the British Pharmacopœia, 1898.

A Laboratory Manual of Physiological Chemistry. By ELBERT W. ROCKWOOD, B.S., M.D., Professor of Chemistry and Toxicology in the University of Iowa. Philadelphia, New York, and Chicago: The F. A. Davis Company. 1899. Price $1.—This is essentially a book for experimental work and is evidently the outcome of laboratory experience. The experiments are mostly of a simple character, and when detailed experiments are necessary they are described in small type for the benefit of advanced students. The book affords a very clear and experimental course of physiological inquiry. We notice that in describing Pettenkofer's test for the biliary acids the author warns the students not to overheat the test mixture for fear of the cane sugar charring. We have again and again pointed out that this difficulty may be completely avoided by substituting glucose for cane sugar in the test. The book is excellently printed in bold clear type on toned paper. Occasionally the pages are interleaved with blank sheets for the purpose of making notes, the utility of which arrangement is doubtful or is seldom taken advantage of. The illustrations are decidedly good and true and relate chiefly to urinary deposits, casts, and absorption spectra. The book is an excellent practical elementary guide to the study of physiology.

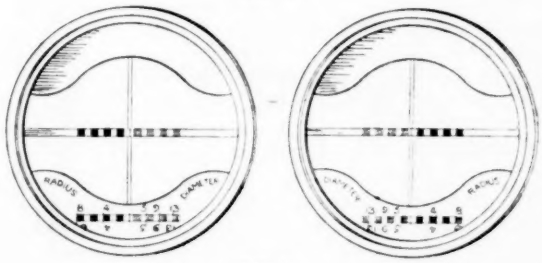
Architectural Hygiene. By BANISTER F. FLETCHER and H PHILLIPS FLETCHER. London: Office of the *Builder*. 1899. Pp. 249.—This is a reprint of a series of articles which appeared in the Students' Column of the *Builder*. It is a small work and the descriptions of the different processes involved in applied sanitation are necessarily sketchy. This is the case particularly with the sections on sewage disposal, heating, and ventilation. The chapters on construction in regard to drainage, water-supply, and building are excellent. The authors are wrong in attributing the plenum system of ventilation of hospitals to Mr. Henman of Birmingham. The system was introduced by Mr. Key of Glasgow and was applied by Mr. Henman to the General Hospital of Birmingham, of which he was the architect. The book covers a remarkably wide ground considering the space at the disposal of the authors. It gives a very good general idea of the way in which sanitary knowledge should be applied. An important feature in the book is the number of excellent illustrations which assist the authors very materially in describing the fittings and apparatus concerned in sanitary construction.

New Inventions.

AN IMPROVED METHOD OF EYE-MEASUREMENT.

THE primary purpose of the small instrument described below is to quickly determine and accurately record the relative position to each other of the centres of the two pupils of the eyes in a patient under examination. That this point is not an immaterial one will be generally admitted, especially in connexion with the estimation of refraction, as in order to obtain the most efficient results with spectacles it is essential that the position of the centres of the lenses should accurately correspond with the visual axes; and also that in any subsequent examination for the object of comparison, the correcting lenses should assume precisely the same position as on the former occasion. Without some such means as this instrument affords, the exact centring of the lenses must always be one of slight uncertainty and guesswork. There are *subjective* modes of attaining this object, but they are not so speedy, and they are greatly dependent upon the quality of the intelligence of the patient.

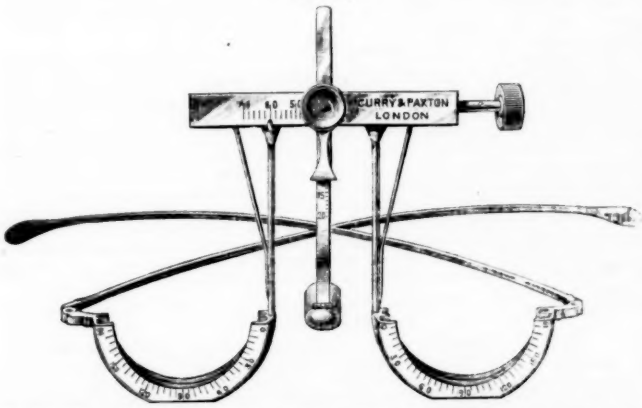
FIG. 1.



Full size.

For several years I have constantly employed the discs (Fig. 1) for this purpose, and I have found them to be most satisfactory, but I have lately been able considerably further to extend their scope of usefulness. This is done by supplementing them with a double scale, marked in millimetres. One of the scales, which is stamped in red and is only half of what the complete scale would be, records the *diameter* measured from the central point; the other scale, in black, and which is complete, indicates the length of *radius* or absolute distance from the centre. The repetition of the scale in fuller detail below is simply to facilitate measurement, and the numerals duplicated in reverse enable the readings to be easily made at any position of rotation in the trial-frame. The millimetre intervals are alternately coloured and blank so that they may be more clearly seen. The discs must be used in combination with an adjustable trial-frame, such as the one figured here (Fig. 2), also made for me by Messrs. Curry and Paxton; it is on the principle of that originally described by Mr. Lindsay Johnson.[1]

FIG. 2.



The diameter scale (red) permits of the measurement of the size of the pupils, relatively to each other as well as separately; it also allows of the estimation of any abnormalities in the shape or size of the pupil due to congenital, pathological, or operative causes. In addition, it enables the size of the cornea to be measured. The *radius* scale (black) furnishes a precise means of indicating the position, the shape, and the extent of any markings or alterations in the cornea, whether situated on its surface, in its substance, or in structures lying behind it or adjacent to it. It is also of use in observing the progress of inflammatory processes in the cornea by noting their increase in area or rate of absorption. Another mode of employing it is to gauge the extent and direction of deviations of the axis of the globe from that of direct vision, when caused by muscular action or by displacement due to the presence and growth of tumour formation. In the same way the limit of muscular excursions of the globe in various directions may be noted, and compared with similar observations at later periods.

The general mode of use is simple. A pair of trial-frames with the discs inserted in the usual position of cylindrical lenses is placed on the patient, who is seated at about the distance of a metre in front of the surgeon. The patient must gaze steadily forwards at a point corresponding with the bridge of the nose of the examiner, who then, by screwing the horizontal and vertical adjustment racks, brings the centres of the cross-bars of the discs opposite the centres of the patient's pupils. The two indicators of the trial-frame are then read off and noted. This gives the position of the pupil-centres, and the extent of their separation from each other. It also indicates approximately the position which would be required for spectacles to be used at "reading" distance. There is no difficulty in similarly obtaining the proper adjustment for "distance" spectacles, as at six metres the bright white metal of the cross-bars is distinctly seen against the darker tint of the eye behind it.

Further measurements when required may afterwards now be made. The size of the pupil is found by comparing the position of its edge with the number of intervals it extends to on the red bar and referring to the adjacent duplicate scale for the figures. The axis on the "cylinder-part" of the trial-frame at which this diameter is obtained should at the same time be noted. The size of the cornea is obtained in the same way. Not only may the size and general shape of the pupil be thus correctly remembered, but the position and extent of irregularities due to adhesions or malformations, may also be represented and even mapped out, by doing so on a chart such as that ordinarily used with a perimeter. The other scale (black) is employed in a similar manner for obtaining the actual size and shape of corneal alterations, the position of which is found by noting their distance from the centre and also the axis in the frame at which it is read. The extent of deviations and also excursions of the globe may be recorded and compared, by noticing on the radius scale how closely the corneal margin approaches towards the central point in the particular axis. The corneal diameter must also be ascertained in conjunction with this in order to make such a comparison of any value.

In brief summary the discs enable accurate record to be made of: (*a*) the position of the pupil centres, whether at a near distance or further off; (*b*) the individual and relative size

[1] Transactions of the Ophthalmological Society of the United Kingdom, vol. ii., p. 276.

of the pupils; (*c*) alterations in the shape and size of the pupils, congenital, pathological, or operative; (*d*) the size of the cornea; (*e*) the position, shape, and extent of alterations in the cornea, whether on its surface, in its substance, or behind it, or in structures adjacent to it, also the progress of inflammatory processes in the same situations; (*f*) the extent and direction of deviations of the globe from the direct visual axis; and (*g*) the extent of the excursions of the globe under muscular action.

Harley-street, W. KENNETH SCOTT.

IMPROVED EAR-DRUMS.

THIS invention consists of a trumpet and an ear-drum combined in one. The whole instrument is made of india-rubber, so that the apparatus may be worn day and night without causing any pain in the ear. The trumpet-shaped tube collects and assists the conduction of sound-waves to the natural tympanum. The disc-shaped portion at one end of the trumpet-shaped tube is cut with scissors to the size

of the ear canal and introduced into the ear so that it covers up the perforation, whilst the sound is gathered in the trumpet-shaped tube and conducted by the central wire into the middle ear. In cases where there is slight deafness due to dry catarrh the central wire is omitted and the sound waves are gathered and transmitted strongly by one trumpet-shaped tube alone to the middle ear. The ear-drum is easy of introduction and invisible. They are manufactured by Arnold and Sons, West Smithfield, London.

Bombay. H. J. DADYSETT, L.R.C.P., L.R.C.S. Edin.

AN IMPROVED CUFF FASTENER.

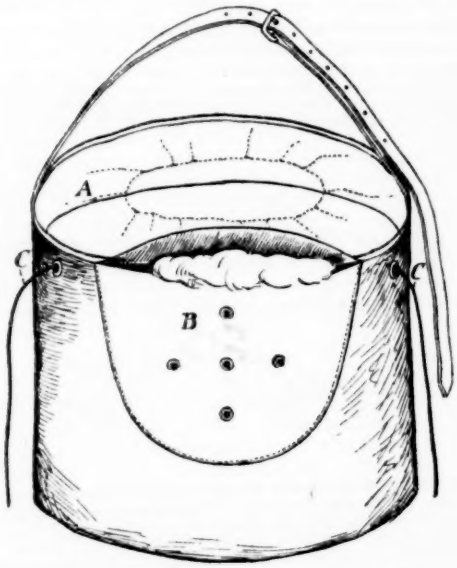
ALTHOUGH not coming strictly within the limits of classification among surgical instruments, yet from its promise of extensive usefulness amongst members of the nursing staffs of both hospitals and nursing institutions generally I venture to bring this invention before the notice of the readers of THE LANCET. It is my wife's invention and she was led to devise it in consequence of the great difficulty experienced in keeping the linen cuffs which are worn outside the dress sleeves in their proper position. Pins, strings, studs, &c., had all been tried in turn separately and in combination, but none were satisfactory. The contrivance is quite simple and practically consists of the ordinary collar or cuff stud with the base extended into the shape of a bangle or bracelet. This extension is made of resilient material, such as nickeled steel or xylonite; it bends round the wrist by its own elasticity and completely encircles it, and when fixed in position has a firm and comfortable sensation. When the cuff is fixed to the stud the desired position is at once secured, and the fastener does not shift either up or down, or round the arm in any movement. The cuff can be fixed in a moment, and its removal is equally expeditious, the "Fastener," if so desired, being left upon the sleeve. Casualty nurses and district nurses will appreciate this. Samples and any further particulars can be obtained from Mr. G. Brooks, ironmonger, &c., Cullompton, by whom specimens have been sent to many nurses and nursing institutions. Judging from replies received they have proved very satisfactory.

G. G. GIDLEY, M.R.C.S. Eng., L.R.C.P. Lond., &c.

Cullompton.

AN ANTISEPTIC MUZZLE.

A COMBINED nose-bag, water-bucket, and antiseptic muzzle for the prevention of "horse sickness" in South Africa—total weight 12 ounces—has been devised by Lord Frederick Brudenell Bruce and Mr. Ernest Kingscote, M.B., C.M., L.R.C.S. Edin. (Surgeon-Captain Prince of Wales's Own Royal Wiltshire Yeomanry Cavalry). Horse sickness is supposed to be acquired by breathing the veldt air at night and eating the grass at a certain season of the year. Stabled horses do not acquire it, but 75 per cent. of imported horses are said to succumb to the disease. It is therefore desirable to devise some means of curbing its virulence. Such a means it is claimed is to hand in the combined nose-bag, water-bucket, and antiseptic muzzle. The article is made of a material called "wolft" which is extremely light and more durable than leather and is waterproof. The bag (see Figure) is 16 inches by 10 inches (regulation size)



and can be used as an ordinary nose-bag during the day or, being waterproof, as a water-bucket. At night the bag is attached to the head-stall and accurately adjusted by the strings C, C to the horse's head beneath the eyes. As practically all the air inhaled has to come through the breathing holes in the pocket B, it is only necessary to place in the latter a layer of cotton wool and to pour a few drops of eucalyptus oil on to it through the breathing holes in order to render the inhaled air aseptic. The inventors state that horses do not object to the inhalation of eucalyptus oil. The bag has been tried on horses and is being supplied to many of the Yeomanry and others at the front. It may be obtained at the Military Equipment Stores, Waterloo-place, S.W.

ROYAL WEST OF ENGLAND SANATORIUM.—The annual meeting of the Royal West of England Sanatorium, Weston-super-Mare, was held on Feb. 22nd, under the presidency of Mr. F. J. Fry, J.P. The medical report showed that 2117 patients had been admitted (1171 men and 946 women), showing an increase of 114 on the number for 1898. 8450 hot and cold sea-water baths had been used. The income for the year amounted to £3585 and the expenditure to £3430. The committee have placed at the disposal of the Government, free of all charges, one of the principal wards for the use of convalescent soldiers returned from South Africa and already four of them are in the sanatorium.

TYPHOID FEVER AT FALMOUTH.—The report of Dr. G. S. Buchanan, medical inspector to the Local Government Board, on his inquiry last year into the outbreak of typhoid fever at Falmouth was issued on Feb. 22nd. With regard to the water-supply Dr. Buchanan is not satisfied that there was any specific contamination at the source or on the gathering ground. He inclines, however, to the belief that the outbreak was due to the local contamination of the supply through in-suction of infectious matter into the pipes. He advises the town council to consider, not only the disposal of the sewage, but the state of the drains and sewers, and to provide an infectious hospital. He also recommends the water company to adopt various specified precautions.

THE LANCET.

LONDON: SATURDAY, MARCH 3, 1900.

WE know the effect of the mind upon the body to be exceedingly great. In times of epidemic, it is the anxious, the nervous, and those who are depressed and troubled with fear who the more readily fall victims to the prevailing disease. Such receptivity determines the outbreak of illness, and may possibly facilitate the spread of other maladies than infectious ones. There can be no doubt that the news from the seat of war has until quite recently had a very depressing effect on the minds of most people of this country. How far has such depression contributed to the spread of influenza and other diseases? Statistics on this point, were it possible to obtain them, might be very instructive. The reverses which our arms suffered during the first three months of the war coincided with an exceptional prevalence of sickness. Of course, it may very justly be urged that the coincidence can be explained by the simultaneous epidemic of influenza and by the wintry season. But if the splendid success with which our arms have been crowned during the past two weeks is maintained, and if there should be at the same time a marked improvement in the public health, the question may fairly be asked whether the abatement of illness is not in part due to psychological causes.

If we go about our business with a heavy weight on our minds, with our thoughts distracted and troubled by deep anxiety and apprehension, do we not tend towards a morbid condition that renders us especially susceptible to disease? The answer is certainly yes. And there is at least one evil influence from which we might have been spared and against which we may well be warned, for we are not yet out of the wood. Much unnecessary revulsion of feeling has been produced by the false presentation of war news. A reverse is difficult to endure, but when it follows immediately on confident affirmations of near victory it is infinitely worse. To fail is bad enough, but when such failure is preceded by the exultation of a supposed victory the shock and the revulsion of feeling are much more trying and intense. Therefore we should take warning by the past, and not allow ourselves to be carried away by sensational and badly sifted information which too often has to be contradicted on the morrow. It requires great coolness and great sobriety of judgment to read, to analyse, to weigh, and to dissect the very confusing and contradictory news which we receive from the seat of war. Those who are gifted with a judicious power of perception will avoid the extremes of exultation or depression. This week we run the risk of over-exultation, just as formerly we were exposed to the risk of too deep a depression. All these extremes must be avoided. Much of the misconception which has arisen in England is due to the fact that the war in South Africa has been thoughtlessly considered in the light of the history of great European wars. The nearest precedents to the present war that can be found in modern European experience are the wars of the Turks against the Servians and the Montenegrins, and the campaigns of Austria in Bosnia and Herzegovina. Had we taken the history of these wars to heart we should have realised that victory was only to be obtained by the employment of vastly superior forces, and should have avoided surprise and disappointment at our early failures.

That there should be complete confidence in ultimate success is only natural when we consider the valour of the British soldier, how vast are the resources of which we can dispose, and how changed the whole face of our prospects now is by the surrender of General CRONJE and the magnificent relief of Ladysmith; but, in the meanwhile, let us practise the virtue of patience. It will be time enough to exult when the war is definitely concluded in our favour. We shall lose nothing by patience and may avoid disappointments that are demoralising to the mind and injurious to the body. Let us, though we are now on the winning side, continue to search out our shortcomings: let us not forget the days of adversity and the lessons which they taught. The man of a calm, dispassionate mind who recognises that there are faults on both sides, that there is need of reform in all countries, that we do not as a birthright possess every virtue under the sun, and that consequently adversity may be but a friend in disguise, even as he has been able best to resist the depressing effects of the past crises will also be able best to comport himself with moderation in the hour of victory. Finally, we may repeat that these simple, obvious principles, which are none the less hard to observe because they are so simple, are not only medicine for the soul but also physic for the body.

THE advance of sanitation in certain States of the American Union has of recent years been indeed remarkable, and the example which Massachusetts, for instance, has set in the direction of scientific research in matters concerned with water and sewage purification might profitably be followed by many European countries, not omitting Great Britain. It is, however, to be regretted, more particularly so if regard be had to the expansion of America and to the probable creation ere long of an American empire beyond the seas, that this great republic does not at present feel herself justified in dispensing with quarantine methods and in relying upon her sanitary machinery for the control of exotic disease.

The Treasury Department, under the advice of Surgeon-General WALTER WYMAN, of the Marine Hospital Service, have recently issued certain additions to their quarantine regulations for preventing the plague which are well worth study. In the first place, it is enacted that vaccination should not be practised on persons at, or *en route* from, places infected with plague inasmuch as such vaccination "increases the liability to plague infection and by inducing fever and swollen glands tends to confuse diagnosis at the port of arrival." This prohibition would, we surmise, hardly be enforced had the patient been exposed to infection from small-pox, as the presence of small-pox on board a ship is little less disastrous than is bubonic

plague. Throughout the new regulations much use is made of the members of that excellent organisation the Marine Hospital Service, and baggage, even though coming through a plague-infected district, will not be rejected in America if it is duly sealed by a medical officer of this service and arrives with its seal unbroken. Passengers, however, coming from a suspected or infected locality who desire to take passage at an uninfected port are to be kept under observation for 15 days prior to embarkation, or otherwise the vessel carrying such passengers will be considered as coming from an infected port, and this even if no case of plague has developed on the journey. The baggage of such passengers is to be disinfected before being sent on board. When plague is prevailing in a port it is forbidden to tie up a vessel to the dock and no ropes likely to afford passage for rats are to be allowed. It is, moreover, enacted, with a view to the prevention of the spread of plague by mammals, that dogs, cats, monkeys, mice, and the like, are not to accompany passengers as pets. If they do so the animals are liable to a quarantine period of 15 days. Under the regulations relative to the American ports we note that pilots, Customs officers, and agents, or other persons whose official duties may cause them to board incoming vessels, may be deemed and treated as passengers or crew and can be detained in quarantine sufficiently long to cover the period of incubation of plague. As to the examination of passengers, it is provided that in dealing with infected or suspected vessels all clothes likely to interfere with the examination of glandular regions are to be removed, female inspectors being of course provided. In the treatment of vessels suspected of plague it is laid down that no person from an infected or suspected place shall be admitted into the United States until 15 days shall have elapsed under observation, but such observation may take place at the port of departure, at sea, or at the port of arrival. In the case, however, of a first-cabin passenger, who is certified by an officer of the Marine Hospital Service not to have been exposed to infection for 15 days immediately prior to embarkation, entrance may be allowed without detention. All passengers other than first-cabin passengers are to be bathed and their clothing disinfected before landing, and if the crew, in the opinion of the quarantine officers, have been exposed to infection, similar measures are to be taken with regard to them. Extensive operations are contemplated in reference to the baggage from infected places, and its disinfection is provided for either at the port of departure or that of entrance. The quarantine officer is given enormous discretionary power in relation to vessels of this class and in the event of a vessel carrying passengers but having no surgeon on board the ship may be quarantined with all on board for the full 15 days from the completion of disinfection.

The methods adopted for dealing with plague-infected vessels would be regarded in this country as altogether impracticable, but it has, of course, to be remembered that the internal sanitary machinery of America is behind that of this country. The sick and suspected cases are to be isolated and the remainder of the passengers are to be segregated in groups; while, if practicable, antiseptic serum is to be used as a preventive measure. All are to be detained under observation for 15 days from the "last possible exposure to infection" and are to be inspected twice daily by the physician in charge. As a preliminary measure all accessible parts of the vessel are to be fumigated with sulphur dioxide, with a view, it appears, to the destruction of the rats on board, and such disinfection is to be performed by daylight in order that small boats around the vessel may be able to prevent the escape of rats. The holds of infected or suspected iron vessels carrying cargo are to be fumigated for 24 hours with sulphur dioxide, and if the hold is without cargo it is to be thoroughly washed with perchloride of mercury. It will be of great interest to observe how, in the most unfortunate event of plague extending and many ports becoming infected with the disease, America will be able to carry out her scheme in its entirety. Imagine, for instance, such regulations being in force in this country and Calais infected with plague. How would they work? We note, however, that there are many discretionary clauses in the regulations, and we infer that the rules are a little theoretical. It will be seen, by the way, in a communication from our New York correspondent that 15 officers of the United States Marine Hospital Service have been detailed for service at European seaports. They will take note of vessels bound for the United States and will keep the Bureau informed as to the sanitary condition of the cities in which they are stationed. This is a sound idea.

IN a pamphlet entitled "On Life Assurance Inquiries respecting the Use of Alcoholic Stimulants"[1] Sir DYCE DUCKWORTH points out that, with the exception of the inquiry regarding the tendency to tuberculous disease in any individual presenting himself for life assurance, there is no question of greater importance, or more difficult to find the exact answer to, than that relating to the employment of alcoholic drinks. There is seldom difficulty in recognising the indications presented by candidates who indulge freely in stimulants, yet even in some of these instances a good deal of experience is needed on the part of the medical examiner and some moral courage to determine the matter and manner of his questions. But in a large number of candidates the difficulty is to determine exactly what constitutes a departure from strict moderation in the use of alcoholic liquids. We fully support Sir DYCE DUCKWORTH'S contention that not only great clinical experience and wide knowledge of the habits of different classes of people are requisite to qualify medical examiners in prosecuting their inquiries, but also that there should be a personal knowledge of the character, qualities, and effects of different varieties of alcoholised liquors.

It has been argued that the practitioner who is a life-long abstainer is probably less well equipped than others to judge quite correctly in all the bearings of this matter owing to his personal inexperience. In the debate which followed upon Sir DYCE DUCKWORTH'S paper, this opinion was strongly repudiated by Dr. HINGSTON FOX, who, as an abstainer himself, submitted that the experience by which these cases are judged is derived from the observation

[1] A paper read before the Life Assurance Medical Officers' Association on Nov. 1st, 1899, by Sir Dyce Duckworth, with the discussion that followed.

of men in general, observation which comes to medical men every day in countless forms. This is undoubtedly true up to a certain point, but at the same time we cannot help feeling that a strict abstainer from alcohol can hardly resist a certain bias against habitual use of alcoholic drinks, though used to an extent which the majority would regard as moderate. The difficulty lies mainly in deciding what is to be regarded as "moderate drinking," or, in more scientific phraseology, as the "physiological limit." The statistics of those assurance societies which have two departments—one for those who abstain and the other for those who do not—were severely criticised by Dr. DE HAVILLAND HALL, who remarked that when the position held by total abstainers in such offices is compared with that held by the moderate drinkers everything is in favour of the total abstainer, because the ordinary class includes those who drink moderately and also those who drink immoderately. Clearly such figures will not assist us to draw a comparison between the effects of moderate drinking and "immoderate moderation," as Sir DYCE DUCKWORTH expressed it. The medical adviser is called upon to consider in detail the circumstances under which the proposer is living, and to estimate as best he can whether these circumstances are likely to be continued and become disastrous, or whether, either at a medical man's suggestion or from some other cause, the proposer is likely to amend his ways, to reduce his supply, and so to prevent any evil effect. Only after prolonged experience can any reliable opinion be formed. We believe that the vast preponderance of medical opinion will be with Sir DYCE DUCKWORTH in the belief "in the value of a truly moderate quantity of alcoholic liquor in some form consumed with a meal, in no routine fashion, however, but according to the demands of a disciplined appetite"; while no medical man will dissent from the view that total abstinence should be prescribed for those persons with morbid or irregular craving for alcohol, whether this be inherited or acquired. There can also be no doubt that those individuals who have habitually overstepped the "physiological limit" should not be rated as first-class lives. This morbid condition is shown by premature ageing, a tendency to obesity, and more especially by evidences of vascular changes such as small dilatations of superficial vessels and progressive arterial sclerosis long before the natural period in which such senile decay may be expected. Other signs are early whitening of the hair, and not seldom, through errors of hepatic and other metabolism, some degree of glycosuria is apt to occur. The kidneys are not infrequently involved in the sclerosing process.

As a practical outcome of his remarks Sir DYCE DUCKWORTH urged on the consideration of the members of the Life Assurance Medical Officers' Association the following rules of practice in dealing with life assurance inquiries into the use of alcoholic liquors: (*a*) that care should be taken to ascertain as fully as possible the nature and amount of stimulants taken daily by each candidate and the particular hours in the day when they are consumed; (*b*) that an attempt should be made to form an accurate opinion as to the effects of the candidate's habits on his bodily textures and nervous capacity, having regard to his mode of life, his environment, and peculiar temptations; and (*c*) that in cases of drinking in the degree of immoderation, if there is no prospect of decided amendment of the habits an extra premium should be demanded in view of a premature onset of degenerative bodily changes. These suggestions will doubtless commend themselves to all those who have to consider applications for life assurance. Each proposal will have to a great extent to be considered on its merits, but a general line of practice, such as the above, will be sure to carry with it the confidence of the directors in the action of their medical advisers whilst avoiding any injustice to proposers.

THE Lunacy Bill introduced by the Lord Chancellor during the present session of Parliament is in form and substance the Bill of last year except for the omission of certain important matters. Amongst the omissions is the provision for making compulsory a scheme of pensions for medical officers, attendants, and other servants of asylums. This has been dropped out of the present Bill owing to the opposition of the county councils to the superannuation scheme proposed in the Bill of last year. The Bill of 1898, re-introduced in 1899, was a decided improvement on that of the previous year, inasmuch as it rendered compulsory the granting of superannuation allowances which were merely optional under section 280 of the Lunacy Act of 1890. Prior to the session of 1898 a petition had been presented to the Lord Chancellor by the Medico-Psychological Association of Great Britain and Ireland, this petition being signed by over 4000 officers, attendants, and servants of public asylums, the result of which was the insertion of the pension clause above referred to. This clause was subsequently dropped owing to the opposition offered, and its omission from the Bill now before the House is a serious defect. It leaves a grievous difficulty and injustice without remedy. On a former occasion we pointed out the injury which such a measure would inflict on the asylum service of the country, for this would be the only public service in which it would be possible for an officer to be cast adrift in his old age after a long and arduous service without any provision other than the savings he might have succeeded in accumulating from an income which is seldom other than small. The provisions for the reception and treatment of incipient and curable forms of insanity reappear in the same form and possess the same commendable features as before. The facilities given for placing suitable cases under care in private homes for the period of six months allowed by the Act, and without the tedious formalities previously in vogue, will afford important aid in the future treatment of incipient and unconfirmed cases of insanity. But we must point out that the reduction in the valid duration of an urgency order from seven days to four days would impose certain practical difficulties in the way of fulfilling the requirements of the Act in localities where a magistrate is not readily found, and might thus defeat the object of such orders. The alteration, while rendering the working of the Act irksome, will probably have no effect in preventing abuse of the liberty of the subject. It is clear that strenuous opposition should be offered to the Bill in the interests of asylum medical officers and other

workers. The machinery of the Medico-Psychological Association has in the past proved effective in promoting reform and in diminishing abuse, and in these labours the Psychological Section of the British Medical Association has loyally coöperated. We may expect that both bodies will unite in an attempt to have restored to the Bill the clause making provision for pensioning the medical and other officers of asylums. The position and status of the public asylum service and the grave responsibilities entrusted to the hands of its officers alike demand that a high level of professional attainments and of character should be a *sine quâ non* to qualify for the service, and it is in accordance with the fitness of things that legislation should have for its object the maintenance of such a level. Its failure to do so can only invite disaster in the future.

Annotations.

"Ne quid nimis."

THE LIABILITY OF THE BAD BOY.

THE case of Eady *v.* Elsden, heard recently by Mr. Justice Ridley and a jury, was curious in more ways than one. In the first place, it is said to have been the first action ever brought by a schoolmaster against his pupil for damage done by the boy to the master's property; and, in the second place, the boy set up unsuccessfully the defence that he was insane when he did the act complained of and that the master undertook the charge of him with the knowledge that he was mentally affected and failed to exercise proper discipline and control over him. The facts seem to have been that a boy, of quick intelligence but of extremely turbulent behaviour, was sent to a school the master of which advertised himself as prepared to undertake the charge of troublesome boys. From this school he ran away and having been brought back set fire to the school-house which was burnt to the ground. The fire office seems to have refused payment of the insurance on the ground that the master was responsible for the fire, and he having ascertained the real author of it brought an action against the boy in order to establish clearly his own position in the matter. The defence of insanity is one frequently raised when a person is charged criminally, but it is not so common when a person is only sought to be made liable civilly, for it may injure the defendant in the pursuit of his daily calling to have proved, or tried to prove, that he was once, at all events, not responsible for his actions. In Eady *v.* Elsden the defendant, though still a minor, was endeavouring to earn a livelihood in the employment of a cycle-maker; he had a reversionary interest in certain property enjoyed by his mother, and that the infant is at law liable for wrongs committed by him is as certain as it is that the parent is not responsible for them. That young Elsden should have failed to prove himself insane is not surprising, for his mother who was his principal witness on this point does not seem to have been able to quote any medical men who were prepared to take a serious view of her son's admitted eccentricities. That he was given to breaking windows and that he had frequently injured his mother's watch was not perhaps considered by medical men, if they were consulted on the subject, symptomatic of serious mental derangement in an otherwise intelligent boy. On the other hand, the plaintiff had on one occasion with commendable prudence consulted a medical man with regard to his pupil owing to some incident that seemed unusual and demanded punishment, when the medical man found nothing to prove that the lad's mind was affected; while on another occasion the late Sir Russell Reynolds, who had seen the boy after he had run away from school, apparently said that he might safely be punished by whipping like any other troublesome pupil. The jury consequently were able to say that young Elsden was not insane when he set fire to Mr. Eady's house and, further, that there was nothing special in the arrangements made with regard to him that need prevent Mr. Eady from recovering. Mr. Eady is to be congratulated upon his success. It would have been a serious matter for him if it had been proved that he undertook, with his eyes open, the charge of boys whose mental condition demanded medical rather than educational care and neglected to take precautions with regard to them.

THE RECENT FATALITY IN SCARBOROUGH HOSPITAL.

A LITTLE girl, aged five years, was taken to the Scarborough Hospital on Friday, Feb. 9th, by her mother, who stated that the child had a bead in her ear, "the club doctor" having seen the patient and having made an unsuccessful attempt to remove it advised that the child should be taken to the hospital where she could be "held by nurses" as she was so restless. At the hospital the patient was seen by Mr. F. Bawtree (assistant house surgeon), who found that as she would not keep still it was impossible to make an examination of the ear, so he recommended that she should return the next morning to have chloroform administered when a thorough examination could be made. This was agreed to; the mother, who received instructions as to the feeding of the child, brought her again the next morning (Feb. 10th). Dr. M. D. Wood (senior house surgeon) gave chloroform from a small drop-bottle upon lint. The patient was under the influence of the anæsthetic in about six or seven minutes. Mr. Bawtree examined the left ear which was found to be full of clotted blood; this was syringed out and a clear view of the membrana tympani was obtained (it was healthy and there was no rupture); no foreign body was seen. During the time this examination was in progress the patient took the anæsthetic without the least bad sign, the pupils were contracted to pin-points, the breathing was rhythmical, the patient's face was a good colour, and the pulse was regular. Mr. Bawtree having finished his examination requested Dr. Wood to look at the ear, and in the meantime took charge of the patient as far as the anæsthetic was concerned, but no more chloroform was given. Dr. Wood having examined both ears suggested that the left ear should be again syringed as it still contained a fragment of blood-clot. While the syringe was being filled the patient made an attempt to vomit, a small quantity of mucus being expelled from the nose, directly after which it was noticed that the child was cyanosed, the respiration ceased, the pupils began to dilate, but the heart still continued to beat. The urgency of the situation was at once recognised and the child was placed with her head over the end of the table and the body was raised, a finger was passed into the patient's mouth to the back of the tongue and both jaw and tongue were brought forward. Artificial respiration was at once resorted to and the respiratory passages allowed a free entrance of air to the lungs. After this had been in progress for about three-quarters of a minute the patient's condition improved, the colour of the cheeks became more natural, and the pupils began to contract. This improvement, however, was only temporary, and though the artificial respiration was continued in the same way slowly and deliberately the patient sank back into the former condition and died. Brandy was injected into the præcordium and the faradaic current was applied, but without any good effect. In all a little under one drachm of chloroform had been used.

A post-mortem examination was made; the veins of the neck were found to be congested and all the organs of the body were found to be healthy. The wall of the left ventricle of the heart was hypertrophied but all the valves of the heart were competent; there were no signs of disease. The heart weighed five and a quarter ounces. The borough coroner, Mr. George Taylor, held an inquest, and in summing up said he considered that the case was one in which there was necessity for the administration of chloroform, that every care had been used in the administration, and that there was no negligence on the part of anyone. The jury brought in a verdict in accordance with the medical evidence that "Death was due to failure of the heart, following on temporary asphyxia caused by vomiting, consequent upon administration of chloroform." This case is typical of many deaths due to chloroform, especially of fatalities among children. It is noticeable that the administrator of the chloroform handed over his task to a second person. This is often inevitable in hospital practice but is not without danger as the second administrator is often in doubt as to the stage of the anæsthesia. The failure of circulation associated with the onset of vomiting is a common phenomenon which is at present but imperfectly understood. The true causal relation is certainly doubtful, but the asphyxial condition which is described in the present case possibly was the factor determining cardiac failure. There appears to have been impediment to respiration which, imposing a severe strain upon a debilitated heart, taxed it beyond its power. The probability of a weakening of the heart (acute dilatation) by rapid chloroformisation with imperfect ventilation of the lungs, which takes place in many cases, should always be borne in mind as establishing a state of the circulation predisposing to cardiac failure.

HOW TO SPREAD INFECTION.

A VERY useful reminder was administered to the public recently through the publicity given in the newspapers to a case heard at the South-Western Police Court, in which the mistress of a household was summoned under the 126th section of the Public Health Act of 1875 for exposing in a public place a servant in her employment when suffering from a dangerous infectious disorder and particularly for placing her in a public conveyance. The mistress had sent her servant who was ill, accompanied by a fellow-servant, to a medical man. He certified the sick servant to be suffering from diphtheria and advised her removal to the Fever Hospital at Tooting. There appears to have been some conversation between the two servant girls, the medical man, and his partner, as to the comparative merits of the outside of a tram-car and the interior of a cab as conveyances, and the medical man himself seems to have suggested an ambulance. How far this conversation was reported to the mistress by the two servants was not elicited at the hearing before the magistrate, but in the end the mistress, who at least had heard what was the matter with the patient, gave the two servants five shillings and suggested that they should go to the hospital in a cab. The house surgeon very properly detained the cab for disinfection and was no doubt to some extent responsible for the matter coming to the ears of the local authorities who took out the summons. On hearing the whole of the above facts and taking into consideration that the patient was of full age, the magistrate decided that he could not find that the mistress had been in charge of the person suffering and had exposed her within the meaning of the Act and he dismissed the case. He, however, made no order that the unsuccessful prosecutors should pay the defendant's costs, doubtless marking thus his opinion that an employer, presumably of better education than her servants, acting as the defendant had done had incurred a moral if not a legal responsibility. With this view every thoughtful person will concur, and the thoughtless should realise, on reading the report of the case, that the defendant who was summoned escapes a fine but does not go scot free. The costs of a defending solicitor and of witnesses, to say nothing of the anxiety and loss of time, are substantial items, and from a pecuniary point of view, if from no higher motive, it is wiser to keep well within the law than merely to avoid overstepping its limits. Ignorance of its provisions is no defence for breaking it, and this rule involves no hardship where the exercise of ordinary good sense would lead to much the same conclusion as the perusal of the Public Health Act.

THE VESTRIES AND THE SNOW.

THE decision arrived at by Mr. Curtis Bennett in dismissing a summons against the Marylebone Vestry for failing to remove snow is a little disappointing. The complainant, Mr. Joseph Hurst, a barrister, appeared in person, and his own evidence and that of his witnesses, among whom was Lord Robert Cecil, Q.C., were not disputed or contradicted. In the street in which Mr. Hurst lives the snow which fell on Feb. 2nd and 3rd remained unremoved, and was supplemented by the subsequent fall on the 10th, until it melted away on the 20th, the pathways being cleared but the snow from them being left heaped in the gutters. It was argued that by more vigorous measures and by more liberal payment of its workers the vestry might have cleared it away, which it was by law bound to do. On the other side it was proved that labour was difficult to get, that after the first effort, at all events, a wage equal to that paid by other vestries was offered, that 1800 tons of snow were removed, and that the vestry had spent on the work £3260, a sum equal to a rate of three-sevenths of a penny in the pound on the rateable annual value of the parish. It was also urged that by the Act[1] under which the proceedings were brought the vestry was only bound to sweep and cleanse so far as was reasonably practicable and that it could not be called on to attempt impossibilities or be punished for failing to achieve them; and this view the learned magistrate took in dismissing the summons, which, however, he did without allowing costs to the otherwise victorious vestry. It seems to us that Mr. Hurst deserved more success. He may have injured his cause by putting his requirements too high or by suggesting the adoption of methods not suited to the district which he represented. The use of salt, which he commended, to thaw the snow is very objectionable where it can be avoided, and it is not largely employed anywhere. Marylebone was not the only district in which loud complaints were to be heard after the recent snowfall; they were heard all over London, and they are invariably heard when any serious fall of snow takes place. It is quite possible that the remedy may not lie in the employment of a very much larger body of men or in the expenditure of very much larger sums of money than are now usual, although parsimony in such emergencies is to be deprecated. The cure probably lies in the better organisation of the labour with a view to its prompt application, in the better supervision of the gangs to ensure their doing their full measure of work, and in preparing some permanent apparatus in each district for the liquefaction of the snow, so that the carts employed may do as much work as possible in the shortest possible time. It was said recently on the death of a prominent New York citizen that until he took in hand the cleansing of the streets of New York the removal of snow had always been regarded as presenting insurmountable difficulties. Perhaps some day a London vestry will find an organiser whose example will instruct other vestries. Meanwhile opinions differ as to the desirability of throwing on the local authorities the duty of removing snow from the side walks—a duty which in many cases lately they have carried out

[1] Public Health (London) Act, 1891.

inadequately, and which, as Mr. Hurst observed, the private citizen is now not only not called upon but is not permitted to perform.

HOSPITALS IN NEW SOUTH WALES.

THE fourth report of the Royal Commission on Public Charities in New South Wales deals with the hospitals of that colony. It is a Blue-book published by the Government printers in Sydney and contains a total of 254 pages, 55 of which are devoted to the report itself and the remainder to the minutes of evidence and appendices. The Commission was appointed in November, 1897; as recorded in this volume it held 39 meetings from April 14th, 1899, to Sept. 13th, 1899. There are in the colony 108 hospitals which are subsidised by the State, one maintained entirely by the State, and five not subsidised. To these have to be added five institutions for lying-in cases, three of which receive Government aid. These 119 institutions provide for 3422 beds—namely, about two and a half beds per 1000 of the population, and in addition there are 1383 hospital beds in the Government Asylums for the infirm and destitute, so that in all there is accommodation for 4805 patients, being a ratio of about three and a half beds per 1000 of the population. The total expenditure in 1898 was £145,424. The receipts (less the bequests which were invested by the Sydney and Prince Alfred Hospitals and consequently were not available for expenditure) amounted to £142,686, towards which the Government contributed £83,355. Of the latter sum £20,910 were for the maintenance of the hospital at Little Bay. The cost of the treatment of the sick poor in the Government Asylums of the Infirm and Destitute is not taken into account in these figures. Of the total revenue of the subsidised hospitals (less the bequests referred to), the Government contributed 51 per cent. in 1897 and 51·3 per cent. in 1898; whilst the contributions from the public in the form of subscriptions and donations in three years amounted to only 33·9 per cent. and 33·5 per cent. respectively. The total number of in-patients treated in the subsidised hospitals was 22,158 in 1897 and 23,832 in 1898. The number of in-patients treated in 1898 by the hospitals not subsidised by the State (excluding lying-in homes) was 3292, of which 1665 were dealt with at St. Vincent's Hospital, Sydney. Including the number treated at the Coast Hospital there were thus 29,818 patients who received hospital care in the colony in 1898, an increase of over 76 per cent. in the last ten years. The general hospitals in the metropolitan area of Sydney are: (1) the Sydney Hospital (including the Ophthalmic Branch) (318 beds); (2) the Prince Alfred Hospital (236 beds); (3) St. Vincent's Hospital (175 beds); (4) the Glebe Hospital for Children (64 beds); and (5) the Coast Hospital (286 beds). In addition to these there are (*a*) the convalescent hospitals (at least 100 beds); (*b*) the suburban hospitals (152 beds); and (*c*) special hospitals for maternity cases and diseases of women (approximately 181 beds). The majority of the witnesses examined by the Commission stated that there was great pressure on this accommodation, but on the other hand some witnesses well qualified to form an opinion (Dr. Ashburton Thompson, Dr. Charles Mackellar, and Dr. Sawkins) saw no need for any immediate increase. Sydney Hospital has been in active operation ever since its foundation in 1811. The buildings in which the patients were housed were, with the exception of one detached block, demolished in 1876, and temporary wooden structures were provided so that the work of the hospital could be continued until the completion of the new buildings in 1892. The new hospital is on the pavilion system, contains 12 wards, and has "bed accommodation" for 241 patients. It has a "spacious and well-arranged" pathological department, with reference to which the following remarkable observation is made in the report: "It appears to be unnecessary that pathological or bacteriological inquiries, except for clinical purposes, should be undertaken at this hospital, to which no medical school is attached, and anything in the nature of bacteriological research would appear to be outside the functions of an institution of this character." The ophthalmic department at Moorcliff has 69 beds. The number of in-patients in 1898 was 3904. The Prince Alfred Hospital was the outcome of a movement initiated in 1868 to give expression to the gratitude of the public at the recovery of Prince Alfred (the Duke of Edinburgh) from an attack made on his life. By a special Act of Parliament it is affiliated to the University of Sydney. The staff of the hospital includes a medical tutor, with a view of assisting students in their clinical work. The number of in-patients treated in 1898 was 3706 and of out-patients and casualty cases about 12,500. St. Vincent's Hospital is essentially a private institution, under the care of the Sisters of Charity, and under the immediate direction of the mother rectress of the Order, but it takes rank after the large public hospitals (the Sydney and Prince Alfred) owing to its large size and the number of patients for whom it makes provision. It was first opened (with eight beds) on a site different from the present one in 1857. It now contains seven main wards and 20 private wards. In 1898 there were 1665 in-patients, and there were also 7644 out-patients who made 22,700 attendances. The Coast Hospital, built during an epidemic of small-pox in 1881 and 1882, is essentially a Government institution. In 1883 lepers were sent there and were accommodated in temporary structures till 1890, when a regular lazaret was built. Since 1884 it has been used as an overflow hospital for the metropolitan district, and even for the treatment of infectious disease. Among the many subjects dealt with in the report are the treatment of sickness by friendly societies and provident dispensaries, the necessity for a free dispensary, accommodation and treatment of venereal disease, the pay or part-pay system in hospitals, out-patients, and private hospitals. On the subject of hospital abuse the report says: "The evidence shows that the charity of the hospitals is taken advantage of by a number of persons who have no claims upon it whatever. ..... Among the more flagrant cases appear to be patients from the country who come to Sydney for operations and who escape the fees which their medical attendants in the country and those they consult in Sydney propose to charge by getting admission to the hospitals under plea of poverty." In Sydney there are about 20 private hospitals, but there is considerable difficulty in ascertaining their exact number, since they are not registered and there is no recognised or complete list of them in the medical or other directories. "The majority have established and highly creditable reputations." The report, however, recommends registration and inspection of these institutions, with a view to preventing illegal operations and other abuses.

MUMPS IN OLD AGE.

FEW cases of mumps in the aged have been recorded. Pepper[1] refers to a case of double parotitis in a lady, aged 84 years, which ran a regular course up to the sixth day when she suddenly became stuporous with jactitation and stertorous respiration. She died on the following day. In the *American Journal of the Medical Sciences*, December, 1899, Dr. H. J. Walcott, jun., has published the following case in which the age appears to be the greatest on record. A retired physician, aged 99½ years, felt chilly while working in his garden, as had been his habit. For two weeks

[1] American Textbook of Practical Medicine, 1892.

he had not felt well and had lost his appetite, and for a few days he had been troubled with dryness of the mouth. He at once went into the house and soon after complained of his face. He vomited after trying to eat a little supper. Towards night the pain became worse and swelling appeared. He experienced now severe pain about the angle of the jaw and difficulty in opening his mouth. The right parotid gland was swollen and tender and the overlying skin was rosy. The pulse was 85, full, and strong; there appeared to be but little fever (owing to the patient's objection the temperature was not taken). On the following day the swelling was much increased, the right eye was closed, and he was delirious. He was weaker on the third day, the swelling was diminished on the fourth, and he could fully open the eye. On the fifth day the swelling was still subsiding, but he gradually became weaker and died. There were a number of cases of mumps in the town, and two weeks before the patient was taken ill he had attended a public entertainment where he came in contact with members of a family in which mumps existed. The question may be asked, Was this a case of parotitis from exposure to cold or from injury, and not one of mumps? The history of exposure, the malaise, anorexia, chill, dryness of the mouth, and course of the disease, are all in favour of the diagnosis of the latter disease.

THE ROYAL METEOROLOGICAL SOCIETY.

As this society will attain its jubilee on Tuesday, April 3rd, having been founded on April 3rd, 1850, it is proposed to observe this fiftieth anniversary in a special manner. The Council have arranged for a commemoration meeting to be held at 3 P.M. at the Institution of Civil Engineers, at which the President of the society will deliver an address and delegates from other societies will be received. In the evening a conversazione will be held at the Royal Institute of Painters in Water Colours. On the following day, April 4th, the Fellows will visit the Royal Observatory, Greenwich, and in the evening will dine together at the Westminster Palace Hotel. In view of this jubilee celebration Mr. G. J. Symons, F.R.S., was elected President at the annual meeting of the society on Jan. 17th, but owing to illness he has since been obliged to resign this office. Under these circumstances the Council at their last meeting appointed Dr. C. Theodore Williams as the President of the society.

FACTORY LEGISLATION.

THE Home Secretary has made it known that his Bill for the amendment of the Factory Acts, which he hopes shortly to introduce, will provide new machinery for bringing into force the special rules applicable to dangerous trades. It will also deal with the question of arbitration in connexion with which considerable difficulty has recently arisen. These special rules will, of course, apply to lead-poisoning in the Potteries, and we understand that the regulations are somewhat severe. When these rules are adopted the next question to be considered is how their enforcement is to be ensured. As it is, the special rules already obtaining and which were established in 1898 are frequently infringed, as is shown by the reports of recent prosecutions appearing in the daily press. These infringements relate in most cases to the failure to provide and maintain sufficient and suitable washing conveniences for all persons employed in dangerous processes. In one instance it was affirmed by the lady inspector that the lavatory accommodation was inadequate. In another case a firm was summoned for employing a girl, 15 years of age, for two months in a dangerous process without a certificate of fitness, while another firm was similarly summoned for not entering the name of the employée in the health register with the consequence that she was not medically examined. Lastly, a well-known firm of potters was summoned for failing to provide overalls and head coverings for workers in the dangerous process of colour-dusting. These interesting cases were brought to light by the vigilance of the principal lady inspector of factories, and it seems to us that with the advent of still more stringent rules an increased number on the staff of inspectors will be required.

VACCINATION AND PASTEURISM IN THE DUTCH EAST INDIES.

THE information epitomised in the subjoined table is derived from the annual reports[1] of the Director of

Year.	Number of calves inoculated.	Number of vaccine tubes distributed.	Percentage of successful vaccinations.	Numbers vaccinated at Institute.	Number of patients treated preventively for rabies.	Deaths among persons so treated.
1895	205	4023	81·3	2960	101	1
1896	189	8040	74·4	3045	230	3
1897	223	9369	63·7	3731	294	9*

* Two of the fatal cases in 1897 "were infected at the instit itself."

the Animal Vaccine and Pasteur Institute which is installed at Weltvreden, in the vicinity of Batavia. The Dutch have always been reputed to be a cleanly race—so much so, indeed, that the spotlessness of a Dutch interior has become proverbial—and in their Eastern possessions (where, according to a recent report, no less than 45 cwt. of quinine were distributed gratuitously among the natives in order to combat malaria) they are evidently fully alive to the advantages of sanitation and preventive medicine.

STREET NOISES AND MEDICAL MEN.

A CASE of some interest to medical men was tried in the High Court of Justice before Mr. Justice Farwell on Feb. 22nd. The plaintiff, Dr. John Templer Crosbie Conry, sought an injunction to restrain the defendant, who sells fried fish, from carrying on his business in such a manner as to be a nuisance. Dr. Conry is in practice in North Kensington, and the defendant, whose name is Fox, lives ten doors away from him. Mr. Fox was wont to stand outside his shop and shout to the public the merits of his wares, in doing which he seriously interfered with plaintiff in the practice of his profession. The plaintiff on examination told how the shouting of the defendant interfered with his examination of patients. Since the writ had been issued some six months ago the shouting had diminished. Defendant was not the only person who shouted, but he was the worst. Defendant said that he came back from market at about 10 A.M. From then until noon he stood outside his shop inviting customers to buy. He then fried fish until 2 P.M., rested from 2 P.M. until 4 P.M., and then stood outside from 4 P.M. until 6 P.M. He only talked and did not shout except when there was a costermonger on the other side of the road. In such a locality it was impossible for him to make a living without calling out to attract custom. The judge said that he considered the injunction should be granted, for the defendant by his shouting made such a noise as seriously to interfere with the practice of the plaintiff. This is a sensible judgment. The contention of the defendant that

[1] These reports are published periodically in the *Medical Journal of the Indian Netherlands* at Batavia.

he had to make a noise to attract custom is nonsense. A fried-fish shop is very far from being a retiring, coy business in itself. It exhales odours which are perfectly perceptible some 100 yards away. No vendor who has a stationary place of business need shout nor should he be allowed to do so. We must put up with the bawls of the wandering coster and of the itinerant muffin-seller, and even, we suppose, with the doleful wailing of the coal-vendor. These peripatetic tradesmen do not appeal to passers-by but to persons in houses, so that they may reasonably contend that notice must be given of their approach. But the fried-fish merchant and the seller of "stickings" should exercise their trade in quiet.

"BIBLIOGRAPHIA MEDICA."

As will be seen by the letter from our Paris correspondent the first number of *Bibliographia Medica* has just been issued. This work, which has arisen like the phœnix from the ashes of the *Index Medicus*, is intended to carry on the same traditions. The amount of matter written upon medical and other scientific subjects is nowadays so great that it is impossible for any one observer to keep in touch with it all except by the aid of some such publication as this. The new venture deserves success and we offer our hearty good wishes for it to Dr. Marcel Baudouin, Dr. C. Potain, and Dr. Charles Richet, who are at the head of the executive organisation for publication.

THE CONNEXION OF THE LYMPHATIC VESSELS AND BLOOD-VESSELS.

THE interesting observations by Mr. C. H. Leaf, which we record this week, add to our knowledge as to the connexion between the lymphatic and blood vascular systems. Mascagni, Haller, and Cruikshank never allowed that the lymphatic system had any connexion with the blood-vessels, except with the large veins in the neck, but cases of such connexion have been recorded by Nuhn, Petrel, Stenson, Wepfer, Schmiedel, Vermeuil, and Meckel. The veins into which the lymphatics directly opened were the venæ cavæ, the portal, renal, axillary, internal iliac, and the azygos veins. The accuracy of these anatomists is too thoroughly known to admit any question as to the truth of their observations, even if we dismiss Lippi's descriptions as extremely doubtful. Mr. Leaf gives us further examples of this connexion between the lymphatic and venous trunks and he also shows that a direct communication exists between the small arteries in the thorax and the lymphatic vessels in that region, although the connexion is not so free as between the lymphatics and the veins.

PUBLIC BATHS.

THERE are still numberless places in these islands unprovided with public baths, and those not merely country places but towns with above 10,000 inhabitants, where there are many workers in occupations tending to make them dirty. Very few, even if we cannot say none, of the houses inhabited by the working classes are provided with bath-rooms, and in fact the same may be said of many houses in London which are not quite modern in construction, but which are let at rentals of considerably over £100 per annum. The need for public baths is specially noticeable in places where large numbers of workers are engaged in occupations such as coal-whipping, in crafts necessitating working in iron, in gasworks, in dusty trades, or, as at Deptford, in businesses connected with the slaughtering of cattle. Although a bath can be taken in a private house, however poor—for the cost of a tub that will answer the purpose is trifling—yet want of space is a serious factor. Families living in one or two rooms, and those not on the ground floor, find it difficult both to procure the water and to get rid of it when it is done with. Therefore we think that the establishment of public baths would undoubtedly be a great convenience to many a worker. In Durham and Northumberland it is, we believe, the weekly custom for every miner to have a warm bath, and a most salutary custom it is. No arguments are needed to prove that it is more healthy to be clean than to be the reverse, but those local authorities who have yet to provide public baths might well be reminded by their medical officers that the skin, to perform its function properly, should be freed from the accumulation of dead epithelium and dried excretion which collects day by day if a bath is not taken. It is false economy on the part of a community, which is never so well off as when its workers are healthy, to shirk the provision of public baths.

PUBLIC MEDICAL SERVICE OF BRITISH GUIANA.

IN the annual report for the year 1898–99, Dr. J. E. Godfrey, acting surgeon-general of British Guiana, states that the health of the colony generally was fairly good in so far that there were no epidemics of a severe type, but the mortality, which was 34 per 1000, was by no means satisfactory. The principal diseases were malarial fevers, intestinal affections, and influenza, and there were also a large number of cases of pneumonia, which were to a great extent due to the prevalence of influenza. There are six public hospitals—namely, one of 700 beds at Georgetown, one of 150 beds at Berbice (New Amsterdam), one of 53 beds at Suddie, one of 35 beds at Bartica, one of 17 beds at Morawhanna, and one of 30 beds at Arakaka. In these institutions there were during the year 14,207 admissions and 1600 deaths of in-patients; there were also 75,356 out-patients treated. At the Lunatic Asylum there were 149 admissions, 83 discharges, and 85 deaths. Here the principal cause of death was cirrhosis of the liver and kidneys, which proved fatal in 25 instances; 11 deaths were attributed to cerebral congestion and the same number to tuberculosis. The average number resident daily during the year was 674. At the Leper Asylum there were 277 males and 97 females on April 1st, 1898, and during the ensuing 12 months 78 males and 21 females were admitted, 26 males and 9 females were discharged, and 37 males and 11 females died. The total expenditure of the medical department for the year 1897–98 was 305,227 dollars.

ANTRAL SUPPURATION.

THE current issue of the Transactions of the Odontological Society contains an interesting and eminently practical paper by Mr. J. G. Turner on Antral Suppuration. The subject is considered under the headings of Diagnosis and Treatment. In dealing with diagnosis the author points out that pus which is pent up in the antrum, although it may cause severe pain, never leads to bulging of the walls, but that in cases which have been recorded the bulging was due to dental cysts which had invaded or displaced the antrum and had subsequently suppurated. In dealing with the value of transillumination as an aid to diagnosis he suggests that the two sides of the face should be compared as to: (1) illumination of the pupils; (2) appreciation of light by the patient; (3) the light along the lower border of the orbit; and (4) the light coming through the chink. Although he regards transillumination of great value he considers it by no means a certain method of arriving at a diagnosis, and he lays great stress upon the importance of a preliminary puncture followed by irrigation in all doubtful cases. In treatment he draws attention to the importance in chronic cases of making a good opening through the canine fossa, maintaining that it is next to impossible to treat effectively such cases through an opening in the

alveolus. Difficulty of treatment arises, in his opinion, from the cellular nature of the upper and inner part of the antrum, especially around the ostium maxillare. These cells are often continued up the inner side of the orbit, and hence there is a danger of the infection spreading to the ethmoidal cells. Thorough treatment of this portion of the antral walls he considers to be most essential and suggests that they should be explored with a probe and regularly swabbed out with pure carbolic acid twice a day.

THE SOPHISTICATION AND CARRIAGE OF MILK.

MILK is at the present time tending to receive some small portion of that attention which its importance as an article of diet for children and invalids merits, and it is to be hoped that the two departmental committees which are now sitting will be able to make such recommendations as will lead to very necessary reform. When, for instance, we read in the current annual reports of Mr. Wynter Blyth, the medical officer of health of Marylebone, that one sample of milk was not only watered and skimmed but had also no less than the enormous amount of 80 grains of borax to the pint, the British Pharmacopœial dose being 5-20 grains, it is clear that at least some regulation of this indiscriminate sophistication of milk is desirable, if only to enable the medical practitioner to have some clear idea of what his patient is taking. There is, by the way, one obvious opportunity for the milk that London drinks to become grossly polluted. Anyone who travels much by train in England must have been struck, especially at night and in the early morning, with the number of enormous metal milk cans which come in and out of the mighty city, and if his curiosity has tempted him to examine these churns more closely he will have noticed that not a few have broken lids which render it impossible to protect the milk from casual or intentional pollution. We believe that certain firms stipulate that the covers of their cans shall be sealed, but we doubt from our own experience whether the precaution is often taken. It would not be difficult to enact regulations rendering the proper sealing of these cans obligatory.

TÆNIA NANA A CAUSE OF CHYLURIA.

IN the Russian Archives of Pathology (tome viii., fasc. 6) Dr. Predtechenski of Moscow reports a case of chyluria which is interesting for several reasons. It is the first case of the kind reported from Russia, though in other parts of Europe cases are occasionally met with in subjects who have not resided in the tropics. Dr. Predtechenski has been able to find some 20 of these cases in medical literature. The cause of tropical cases is generally allowed to be some parasite—filaria sanguinis or distoma hæmatobium. In Europe strongylus gigas has been found and some authors believe that tumours and other pathological conditions which cause stagnation of the chyle and lymph-streams may also produce chyluria. In the Russian case a parasite was detected; at least ova were found in the urine which were diagnosed as those of tænia nana, a minute variety of tapeworm which is tolerably common in Italy but is almost unknown in England, though Dr. Ransom of Nottingham has reported the case of a girl from whose intestinal canal a large number of these parasites were expelled.[1] Dr. Predtechenski's patient was an officer's wife, aged 23 years, who had at times passed turbid or milky urine ever since she was 16 years of age. When seen by him the urine contained, in addition to epithelium, specks or small clots of fibrin, crystals of oxalate of lime, and red and white corpuscles, the last-named having a single spherical nucleus and being in fact small lymphocytes. There were also found some spherical bodies looking like the eggs of some entozoön. They were nearly transparent and under a good immersion lens were seen to possess six hooklets. Their diameter was from 20 to 25 μ and they agreed with the figure of the ova of tænia nana in Mosler and Peiper's work on Animal Parasites. It is suggested that the worm itself may have existed in the kidneys, as another variety—tænia Madagascariensis—is stated to have been found alive in the kidney in a patient suffering from chyluria. The parasite probably occludes the lymphatics and causes them to become distended and finally to rupture, so that the lymph finds its way into the urinary passages. The most efficacious treatment in this case appeared to be gallic acid in 15-grain doses three times a day.

[1] THE LANCET, July 21st, 1888, p. 109.

THE CASE OF A NEWSPAPER YELLER.

WE congratulate Mr. Shirley Murphy upon the public spirit which induced him to prosecute a newspaper yeller for obtaining money under false pretences. The extent to which our streets and squares are made hideous by the bawls of these fellows is becoming serious. In many parts of London, and especially at about 10 o'clock in the evening, an hour when the young and the sick are particularly likely to be composed for their night's rest, the streets suddenly resound with raucous bellowings. If anyone, convinced by the violence of the shouting that something really new is to be found in the paper, should become a purchaser, he will assuredly be deceived. The "'orrible slorter," the "magnificent vict'ry," and the "'eavy fightin'" advertised by the yellers are all fictitious to this extent, that the sensational phrases are chosen to describe some small episode in the war that has been published hours, perhaps days, earlier. In the case where Mr. Shirley Murphy very properly put the law in action last week the newspaper tout definitely stated that Ladysmith had been relieved, and charged 3*d*. for a ½*d*. paper because of the good news of which he was the strident harbinger. Consequently, his conviction was easy to secure. Will a public-spirited individual now try to obtain a conviction on some ground or another, we do not care what, against the more ordinary yeller, who keeps within the letter of truth by being able to show in his paper some sentence, which although describing an ancient event, still justifies to some extent his shouting? The attempt in these cases is really to obtain money under false pretences.

ROENTGEN RAYS IN THE TREATMENT OF LUPUS.

MR. J. F. HALL-EDWARDS contributes a paper to the *Edinburgh Medical Journal* for this month on the Physiological and Therapeutic Action of Roentgen Rays in the Treatment of Lupus. The essentials of the method employed by him are exposure to a highly charged Crookes's tube for a considerable time at short distance. The average duration was 15 minutes and the distance from one to two inches. Three cases are quoted, and though this number is too small to form a basis for generalisation the results recorded are sufficiently obvious and uniform to justify a further trial of the method pursued. 1. A case of lupus vulgaris on the instep. There were five exposures at intervals of from two to three days, except on the last occasion, when nine days intervened. After the fourth exposure sloughing of the patch began and extended for about half an inch round it. The resulting ulcer healed slowly with a sound scar. Two small adjacent patches of lupus which had been protected from the rays by sheet-lead one-eighth of an inch thick also became ulcerated and healed in like manner. 2. A case of lupus erythematosus on the arm. This patch was exposed on two successive days. It had sloughed by the twelfth day after the first exposure a week later it was granulating and ultimately healed well.

3. A case of lupus vulgaris in a typically tuberculous patient. A portion of an extensive patch on the front of the right thigh and knee was treated on two occasions. No result was noticed until 18 days later, when the part exposed to the rays was seen to have sloughed away. The ulcer which formed gradually healed with a sound scar. Except in Case 1, where, as already mentioned, lead was used to protect the adjacent skin, the means employed with this object was a solution of gelatin containing iodoform. A coating of this material appears to have answered its intended purpose. In the treatment of these cases a special tube 18 inches long (to avoid sparking over) was used. Mr. Hall-Edwards asserts that one exposure, or at most two exposures, is sufficient and that the number of exposures employed in Case 1 was excessive, the treatment in this instance being necessarily experimental and tentative. Further observation has proved that a latent period of from 14 to 21 days intervenes in any case after the use of the rays before a result can be looked for. He also suggests that a series of exposures at such a distance as to preclude local inflammation might be equally curative. In Mr. Hall-Edwards's opinion the x rays themselves play a very small part, if any, in the process, for, as Nikola Tesla showed, they easily penetrate an aluminium shield which suffices to prevent burning of the skin. He attributes the beneficially irritant and ulcerative effects to electrical action.

PREMATURE BURIAL.

FROM time to time there come to the fore most ghastly stories of cases of premature interment. Only recently two instances have occurred in Italy. One of these was published in the letter from our Rome correspondent which appeared in our issue of Feb. 24th and a second case is mentioned in the letter from him which will be found in another column. The first case was accompanied by the additional horror that the victim is said to have given birth to a child in a coffin. This at least was the report of the judicial authorities who added that both mother and child had died from suffocation. While it is impossible to prove that the child was not born alive, we think it exceedingly unlikely. It was minus both arms, which had apparently been pulled off by the efforts of those who had attended the mother in her confinement to extract it. That a child should be born alive more than 24 hours after receiving such injuries is, to say the least, very doubtful. Neither does the fact of the fœtus being extruded prove absolutely that the mother must have been alive when buried; this at least is the opinion that has been recorded by some observers. In the case which appears at p. 661 there seems no doubt that the man really was alive when placed in the coffin. There appears to be no information as to whether the death was certified by a medical man as the result of his personal investigation.

MORE OYSTER-BORNE ENTERIC FEVER.

FROM the West of England comes a story of an outbreak of enteric fever in which oysters seem to have played a very conspicuous part. Two servants, a footman and a maidservant, employed at a country seat in Cornwall were attacked by enteric fever soon after consuming certain oysters, and the maidservant succumbed to the malady. At the same house was a shooting party, and two of the guests left on Nov. 11th after having during their stay eaten freely of oysters. These gentlemen were taken ill with enteric fever at their respective homes, the one on Nov. 24th and the other on Nov. 26th. Moreover, a lady guest left this house on Nov. 28th for Ireland taking with her a supply of oysters, some of which she gave to her brother on her arrival. On Dec. 17th this brother developed enteric fever. All the oysters here in question were procured from the same source, and the circumstances remind us of the outbreak at the Connecticut Wesleyan College, in that the oysters were originally procured from a source relatively free from pollution, but were laid down prior to sale for consumption on what appears to be a highly polluted foreshore. The suspected oysters were laid down in the Penryn river off the village of Flushing and opposite to the town of Falmouth. This river is, we learn from the Local Government Board report on Oyster Culture, only one and a half miles in length, and at the head of it the town of Penryn with a population of 3256 pours its sewage. In addition to this there are on the foreshore of Flushing, as also on the opposite side of the river, numerous drains discharging. The oyster layings in the Penryn river must, Dr. Bulstrode states in his report, be regarded as occupying a dangerous position. It is a serious reflection on this state of affairs to read in the report of the meeting of the East Kerrier District Council, at which this matter was discussed, and that various proposals were made for dealing with the danger, but that "it was thought that the authority had no power, and nothing was done."

THE ROYAL NAVY MEDICAL SERVICE.

WE are glad to notice that Sir Walter Foster spoke in terms of commendation of the changes which the First Lord of the Admiralty proposes to make in the Royal Navy Medical Service, for these changes are unquestionably of a highly desirable nature. They are really needed and they will have the effect of greatly increasing the efficiency of the service. It will be remembered that when the report of the committee on the subject was published some time ago it met with our cordial support. We concur with Sir Walter Foster in thinking that the reforms introduced by Mr. Goschen form an enlightened departure. They will afford satisfaction to the medical profession as a whole and will encourage its younger members to enter upon a career of great usefulness. There is surely no need to point out how essential it is that medical officers, separated by their calling and duties from centres of scientific activity, should have every opportunity of keeping abreast with the progress of medicine and surgery and the newest methods of treatment. It is obviously a duty they owe to those committed to their charge. There are many doors to post-graduate study open to medical officers of the services nowadays and we trust that every practicable facility will be extended to them to enter.

THE VALUE OF TECHNICAL CERTIFICATES.

THE movement of the proverbial straw indicates the direction of the wind, and the case tried recently between Sir Philip Magnus and the Plumbers Company indicates much more than the falling out of faithful friends. Sir Philip Magnus sued to be re-instated in his position upon the Court of the Company, from which the company had for a time excluded him, he being a member of the Court, and judgment was given in his favour. Any quarrel between Sir Philip Magnus and the Plumbers Company upon private grounds would not come within the scope of our consideration, but it seems to us that in this dispute questions of considerable, if indirect, influence upon public health were involved. From correspondence that passed some two years ago between Sir Philip Magnus and the Plumbers Company, upon which we commented in THE LANCET of October 2nd, 1897 (p. 872), it appeared that the real matter at issue between the parties was as follows. The Plumbers Company, or rather the Examining Board of the Company, composed of master and operative plumbers selected to represent the plumbing trade, refused to register as plumbers the certificated pupils

of the City and Guilds of London Institute, in which Sir Philip Magnus holds the post of superintendent of technological examinations, unless the candidate first passed the practical tests set by the Examining Board of the Plumbers Company. The Plumbers Company seem to have had, as they possibly still have, grave doubts as to the practical nature of the work done by the pupils of the Institute. Their object is to avoid the registration of any but men who intend to follow the craft of plumbing for a livelihood and who therefore must have a thorough working knowledge of it in every detail. We sympathise with this object heartily.

AT the forthcoming dinner to be given by the Royal Medical Society at Edinburgh on March 6th the guest of the evening, Mr. Victor Horsley, will speak on the subject of "The Medical Corporations," instead of proposing the usual toast. A further indication of the newly awakened interest in the position of medical men is evidenced by a movement now in progress in the eastern and midland counties to arrange a gathering of the profession in the spring to hear the situation discussed by the Direct Representatives on the General Medical Council.

THE annual dinner of the Irish Medical Schools' and Graduates' Association will take place on St. Patrick's Day, Saturday, March 17th, at the Hotel Cecil, at 7.15 P.M. The honorary secretary, to whom all communications should be made, is Mr. P. J. Freyer, 46, Harley-street.

A TELEGRAM from the Governor of Mauritius, Sir Charles Bruce, received at the Colonial Office on Feb. 23rd, states that during the week ending Feb. 22nd eight fresh cases of plague occurred with four deaths. Six cases have also been reported from Aden with one death.

IT is announced that Dr. Sydney Ringer, F.R.S., and Mr. Christopher Heath, the senior physician and surgeon respectively to University College Hospital, are about to retire under the ordinary rules from service upon the active staff.

MR. THOMAS SCATTERGOOD, of Park-square, Leeds, Lecturer on Forensic Medicine at the Yorkshire College and Dean of the Medical Department, died on Feb. 22nd.

THE Admiralty have sanctioned a proposal to provide new naval sick quarters, with a dispensary, at Sheerness, at an estimated cost of £12,000.

THE second reading of the Bill for the Registration of Midwives which was down for Wednesday, Feb. 28th, was not reached.

NURSES' HOME AT BATH.—At the meeting of the Bath Board of Guardians held on Feb. 21st it was decided to erect a nurses' home to give accommodation for 20 nurses. The cost of building is estimated at about £2000.

ROYAL DEVON AND EXETER HOSPITAL.—The annual meeting of this institution was held on Feb. 22nd under the presidency of Colonel Lucas. The medical report stated that 1322 in-patients had been admitted, against 1343 in 1898. The out-patients numbered 4303, against 3850 in the preceding year. 75 patients had been sent to the Ockenden Convalescent Home in connexion with the hospital. The average daily number of in-patients was 145. The financial statement showed that the income from all sources amounted to £13,698, the ordinary expenditure was £8460, and the extraordinary expenditure was £3677, making a total of £12,137.

THE WAR IN SOUTH AFRICA.

THE splendid news has come at last. Ladysmith is relieved and General Cronje has surrendered with all his force.

The brief telegram from Lord Roberts intimating the latter piece of intelligence to Her Majesty's Government was not without a touch of dry humour. Cronje is our prisoner and the unconditional surrender of his army by the irony of fate and a remarkable coincidence occurs on the anniversary of the Majuba Hill disaster, after which reverse to our arms Great Britain gave an example of magnanimity never likely, we imagine, to be repeated in our experience, for the source of the present troubles may be traced to the root which was then planted. Cronje's surrender was a foregone conclusion having regard to the circumstances in which he found himself and the hopeless straits to which his force had been reduced, but this does not render the news any less welcome or important. The result has been brought about by brilliant strategy and admirable tactics on the part of the British leaders, and Lord Roberts has exercised very proper humanity and a wise discretion in delaying the further and complete destruction of a force which was within his grasp at any moment that he liked to crush it. The end is not yet, perhaps not near, but when it comes it will have been purchased with the blood of some of the noblest and bravest of our race and by the outpouring of treasure without stint under the firm conviction on the part of the British Empire that the cause was one of right, justice, and humanity. The empire is of one mind and determined to achieve its purpose. The fruits of its sacrifice and labours will one day be recognised and reaped by all the world, including those who have hitherto been forward to scoff at our arms, revile our motives, and misrepresent or belittle our labours and achievements on the battle-fields of South Africa.

We have now to await with patience the receipt of detailed news from General Buller, whose force has fought its way laboriously and step by step through all those topographical and natural obstacles which lend themselves so powerfully to the Boer system of warfare. The hardest task in the present war fell to the lot of General Buller, and that he has reached his goal proves both his resourcefulness and the indomitable pluck of his officers and men. He was resolved to win through and the forces under his command had entire confidence in his military capacity and ability to conduct them to the successful accomplishment of the relief of Ladysmith. When those who laid down cheerfully their lives under his command and who had the best opportunities for estimating his difficulties and his power to overcome them were content to wait his time, we may be sure that no earlier relief of the beleaguered city was humanly possible. We do not yet know whether the Ladysmith garrison under Sir George White were able to contribute largely to effect their own relief. The monotonous life and diet during the siege, the want of stores for men and horses, and the large number of sick present in Ladysmith must have handicapped their efforts, but we may be sure that they made every attempt to aid the relieving army at the opportune moment. It is a noteworthy fact that the soldiers who are fighting our battles in South Africa never seem to have any misgiving as regards their leaders; on the contrary, they are in excellent fettle and animated with a firm belief in ultimate success; and they never fought better than they have been doing in South Africa. It is certain that no other country could have accomplished in the matter of organisation what England has already done in this war; and after every allowance has been made to our discredit for miscalculations and mistakes it is very questionable whether the army of any other nation would have done better, if as well, in actual fighting under all the adverse circumstances. We await with anxiety full information concerning the condition of the relieved garrison, but our anxiety is tempered by the knowledge that all possible provision has already been made in Natal to receive the sick along the lines of communication and to transmit them with every comfort to the base.

The medical service is continuing to do excellent work in all directions and of the most varied nature. The officers of the Royal Army Medical Corps deserve well of their

country for the fertility of resource, zeal, and ability which they have displayed and for the energy with which they have worked throughout. All who have had opportunities of ascertaining the facts add their testimony to that of Sir William Mac Cormac and others in respect of the medical arrangements, and testify to the promptitude and readiness with which the War Office have complied with every wish and responded to all suggestions in regard to the conveyance of surgical instruments, specially prepared dressings, and other appliances necessary for the treatment of urgent cases requiring immediate operations.

Preparations have been made at Durban and at Pietermaritzburg to celebrate the relief of Ladysmith which was expected hourly, while Sir William Mac Cormac, in his notes this week speaks of the excellent arrangements that have been made at No. 4 General Hospital at Mooi river. Mr. Treves has expressed his complete satisfaction with the management of the hospitals at Pietermaritzburg and other centres. The field hospital arrangements, he said, were as perfect as they could be, and he records a strong testimony to the devotedness of the stretcher-bearers. He added that, in his experience, the Boers had treated our wounded very kindly. The generous efforts of the colonists on behalf of the wounded also elicited from him a word of grateful recognition. Lord Roberts stated in regard to the hospital at Kimberley that Lord Methuen's account of the admirable manner in which the Kimberley hospital was managed had made him desire to send some of his sick and wounded there.

ROYAL VISITS TO THE WOUNDED.

Within the last few days the Royal Victoria Hospital, Netley, has received large batches of sick and wounded from South Africa. The *Kildonan Castle* arrived at Southampton on Feb. 23rd and as the vessel reached the Southampton quay news of the relief of Kimberley was shouted to those on board and received with ringing cheers. The vessel brought 178 men from the front, 53 of whom had been wounded. Captain Lugard of the Indian Staff Corps was among the invalids. Most of the wounded men had received their injuries either at Colesberg or at Magersfontein. The patients were nearly all convalescent, thanks to the skill of Fleet-Surgeon Saunders, R.N., and of Dr. Wilburn, the medical officer of the vessel, who divided the work between them during the voyage. All the invalids were speedily attended to and were transferred into the hospital train and reached Netley early in the afternoon.

The Princess of Wales and her Hospital Ship.

On Feb. 25th the hospital ship, *Princess of Wales*, which left the Cape on Feb. 1st, came into Southampton Water. She brought home 174 men under the command of Major A. Hickman Morgan, D.S.O., late Surgeon-Major A.M.S., the principal medical officer, who on arrival was able to give a very favourable account of the patients. Nearly all of the men had been wounded, but so favourable had the cases been that only one cot case was landed at Southampton. No operations had been performed on board, but a number of bullets had been localised by the x ray apparatus presented to the ship by the Duke of Newcastle. The majority of the men had been wounded at Magersfontein and the Modder river, the regiments represented being the Coldstream Guards, the Argyll and Sutherland Highlanders, the Highland Light Infantry, the Royal Engineers, the Royal Artillery, the Scotch and Dublin Fusiliers, and the Grenadier Guards. Lord and Lady Wantage were awaiting the steamer's arrival accompanied by Major W. G. Macpherson, R.A.M.C., who did such excellent work in connexion with the fitting out of the vessel. Lord Wantage expressed his gratification at the facts that no death had occurred during the voyage and that the patients had made such excellent progress on the road to recovery. The wounded were not landed on the day of arrival as the Princess of Wales had intimated her intention of visiting her hospital ship—a visit which was looked forward to by the men with the keenest interest. The next day (Monday) opened with heavy rain and fog, which continued until nearly 10 o'clock when the sun burst forth brilliantly through the clouds, rapidly dispelling the vapour, and beautiful weather prevailed long before the arrival of the royal train. Carrying out the instructions received from Marlborough House, no one was allowed to enter the wharf where the royal party alighted. The Prince and Princess of Wales, accompanied by the Duke of York, left Waterloo station at 9.30 A.M., and travelling over the London and South-Western Railway reached the docks at 11.20. Their Royal Highnesses were attended by Colonel Sir Nigel Kingscote, Lady Emily Kingscote, Miss Knollys, and Major the Hon. Derek Keppel, and were accompanied by the Hon. Sydney Holland, representing the Red Cross Society. On the platform to receive the royal party were stationed Lieutenant-General Sir Baker Russell, commanding the Southern Division, and his staff, and Captain G. White, R.N. The royal visitors, accompanied by their suite, proceeded by the gangway, which was beautifully decorated, on board of the vessel and were duly received by the captain and officers of the vessel and by Major Hickman Morgan and Major Macpherson, with each of whom the Princess shook hands. Her Royal Highness graciously accepted a beautiful bouquet of lilies of the valley, attached to which were red and white streamers. The Princess visited each patient, their cases being explained to her by Major Hickman Morgan. She spoke in most kindly terms to the men, who were much touched by her gracious manner. Her Royal Highness inquired at some length as to the manner in which the vessel had performed her mission during the voyage, one and all of the men declaring that they had been most comfortable and that every possible requirement was at hand. Most of the patients were sufficiently recovered to be able to stand at attention by the side of their cots, but noticing that in many cases they looked pale and weakly Her Royal Highness promptly directed that all who cared to do so should be seated, an act of thoughtful kindness which went straight to the hearts of the soldiers. Early in the visit Major Hickman Morgan drew attention to a man of the Gordon Highlanders who had been shot in the top of the head while lying in front of the trenches at Magersfontein. The bullet had destroyed the left eye in its course and had emerged at the chin. A man of the Royal Artillery who was shot in the leg was able to produce for inspection the Mauser bullet which had been extracted. Among the patients was a man who had been wounded in the head and whose case has been described by Sir William Mac Cormac as one of the most extraordinary he had ever heard of. Major Hickman Morgan, while showing the Princess a Mauser bullet which he had extracted, stated that the bullet was perhaps the most merciful ever used in warfare. A few of the patients had been suffering from typhoid fever and dysentery, and one of the most serious of these was berthed in the Maud Ward, named after the Princess's youngest daughter. At the end of the visit those men who were sufficiently well were assembled on the deck and they cheered the royal visitors when leaving. The arrival of the *Kildonan Castle* and the hospital ship the *Princess of Wales* has not only again filled up the wards of the Royal Victoria Hospital at Netley, from which a steady stream of men have been passed to convalescent homes and to sick furlough, but has also been the means of bringing Netley the honour of two Royal visits on successive days.

The Prince and Princess of Wales and the Duke of York at the Royal Victoria Hospital, Netley.

On leaving the *Princess of Wales* hospital ship on Monday last the party, accompanied by the military staff of the Southern Division, were conveyed by a special train to Netley. The train steamed into Netley station at 1.20 P.M. when carriages were in waiting to convey the visitors to the officers' mess of the Royal Army Medical Corps where they were received by Colonel Charlton, the principal medical officer at Netley, and his staff. After lunching with Colonel Charlton and the officers of the Royal Army Medical Corps in their fine mess-room, the whole party proceeded to the hospital, where Miss Norman, the lady superintendent of nurses, was introduced. They were then taken through the wards and corridors, in which were drawn up all the patients who were sufficiently convalescent. All the wounded in bed were visited in turn and for each the Prince and Princess of Wales had a kindly word. The visit lasted for about an hour and a half, and after it the royal party returned to London, arriving at Waterloo at 6 o'clock.

The Queen at the Royal Victoria Hospital, Netley.

The visit of their Royal Highnesses the Prince and Princess of Wales, accompanied by the Duke of York, which gave such sincere satisfaction both to the sick and wounded from the front and to those on whom devolves their care while restoration to health is being accomplished, was followed 24 hours later by a visit from Her Most Gracious Majesty the

Queen, who as age advances does not permit those qualities to diminish which have ever marked her out among sovereigns—the qualities of sympathy with the afflicted and pity for the suffering. These qualities, often before displayed during and after the wars in which her armies have been engaged, were again exemplified by her visit to the Royal Victoria Hospital on Tuesday afternoon last, Feb. 27th, when she made a tour of the grand base hospital of the South African army and learned from the men's own lips something of the dangers through which they had passed. The effect of such a visit is truly gratifying to the whole army and will never fade from the memories of the men who have suffered in Great Britain's cause and who the more thoroughly appreciate the Queen's kindness and thoughtfulness from a knowledge of the fatigue which must be inseparable from such a visit at Her Majesty's time of life.

Before her arrival letters were received by the principal medical officer in which Her Majesty expressed her wish that only the officers and nurses who were engaged in the treatment of the patients in the various wards should accompany her to the different divisions of the hospital—a wish which was of course carefully attended to. The royal party travelled from Windsor Castle *viâ* Basingstoke and Fareham, arriving at the Netley railway station at 1.30 P.M., where Her Majesty was met by Lieutenant-General Sir Baker Russell, commanding the Southern Division, and his staff; Colonel Napier, his chief staff officer; Major Kinloch of the 60th Rifles, acting aide-de-camp; and Major Creagh, the assistant adjutant-general at Netley. Proceeding from the station in carriages, through part of Netley village, Her Majesty, who was accompanied by H.R.H. the Princess Beatrice and the Princess Victoria of Schleswig-Holstein and attended by her equerries, Sir John M'Neill, V.C., and Captain Ponsonby, and by Lady Ampthill and Miss Moore, arrived at the west door of the hospital at 1.45 P.M. Here she was received by a guard of honour of the 4th Battalion of the Lincoln Regiment who were drawn up in front of the portico, under which Captain Stevens, R.E., had erected a platform to facilitate Her Majesty's passage from her carriage to the lower corridor of the hospital. The morning, like that of Monday, had opened with much rain, a damp mist hanging over Southampton Water, but during the morning the weather much improved and the sun shone during Her Majesty's short drive. Greeted by the strains of the National Anthem Her Majesty walked, leaning with her left arm on an Indian attendant, up the platform, where she was received by Colonel Charlton, principal medical officer of the hospital, and was presented with a lovely bouquet by Mrs. Charlton. On reaching the door of the hospital the Queen entered her wheeled chair and the military staff of the hospital were presented to her by Colonel Charlton. The officers who had this honour were Colonel K. MacLeod, Lieutenant-Colonel W. E. Webb, Lieutenant-Colonel Hughes, Lieutenant-Colonel Chester, Major W. Dick, Captain Stevens, R.E., and Lieutenant Prentis, and the chaplains of the hospital. Accompanied by Colonel Charlton Her Majesty was wheeled to the lift, in which she was conveyed to the surgical division of the hospital. There she made a careful inspection of the wards, being shown many of the scars made by the Boer bullets and presenting flowers to the men. Her Majesty remarked on the proportion of Highlanders found among the wounded and was informed that a large number of them had suffered at Magersfontein. She remarked to Colonel Charlton on the good news which she had received in the early morning from Lord Roberts and inquired if the men had been informed of it. Being answered in the negative, she requested the principal medical officer at once to announce it, which he did in the terms of Lord Roberts's telegram giving out that General Cronje had unconditionally surrendered to Lord Roberts and upon the anniversary of the Majuba Hill reverse. To one man of the Connaught Rangers Her Majesty remarked that the Irish regiments had done very well during the war, and to another she said, "You have had a hard and severe time." Many of the men to whom the Queen presented flowers were so much affected that they were unable to answer her questions or to express their thanks. From the surgical division Her Majesty passed to the medical division where the cases were explained by Colonel Webb. The whole tour of the hospital occupied two hours, and at its termination, at 3.45, Her Majesty and suite left for Windsor.

(NOTES FROM SIR WILLIAM MACCORMAC.)

(*Continued from p. 562.*)

I and my secretary arrived at Durban on Jan. 27th. The news there was of a disquieting nature, a private report having found credence to the effect that the whole of Buller's army had recrossed the Tugela, having been unable to hold the kopjes they had gained during the previous seven days' fighting. I determined, however, to push on to No. 4 General Hospital at Mooi river at once in the hope that these reports might prove to be untrue and that I might be near at hand for the purpose of participating in the expected relief of Ladysmith. I arrived at Mooi river at 2 A.M. on the 28th and during that day we heard news which confirmed the Durban rumours. At present, therefore, nobody can say when a new advance may be made, and so I determined to remain at this hospital for the present and do what work may come to hand here. During the three days after my arrival the two hospital trains made ten journeys, carrying the wounded between them from Frere to Estcourt, to this hospital, to Pietermaritzburg, and to the hospital ships at Durban. Each train can convey 69 patients lying down and a great many more patients sitting up. During these ten journeys they brought down close upon 1100 cases and there are, at the date of writing this, still about 250 to bring

The situation of affairs as regards the medical organisation in this locality at present is as follows. The field hospitals with the brigades in the fighting line were situated about nine miles from the Tugela river on the further side. The wounded were carried by stretchers and ambulances back across the river to the Stationary Field Hospital, situated on this side of the Tugela, 22 miles up the stream from Frere. This hospital (which I described in my account of the battle of Colenso) has become enlarged from its original size of 150 beds to one of 400 beds. The wounded have been treated and operated upon in this hospital and as they become fit for transport have at once been conveyed by hand stretchers and waggons across the 22 miles of plain to Frere station. The stretchers are carried by volunteer ambulance bearers. After this excessively tedious journey the patients are at once loaded, on arrival, into the hospital trains, the excess being temporarily accommodated in a field hospital of 100 beds at Frere. The hospital is under the command of Major Kirkpatrick, R.A.M.C., and the hospital at Frere is commanded by Major Daly, R.A.M.C. Both of these hospitals have civilian surgeons attached to them for duty under the officers of the Royal Army Medical Corps.

The weather at present is very rainy and the journeys of some of the wounded have been carried on under great difficulties. As the future movements, however, of the army are at present very uncertain the transport of the wounded must of necessity be carried on so as to make room for possible fresh contingencies. The hospital trains are well supplied with luxuries and the wounded are at once fed with comforting soup and drinks. On their arrival at this station (Mooi river) those of the wounded who are destined to remain at this hospital are conveyed in a most comfortable and easy manner by means of the Mac Cormac-Brooke wheeled stretchers to the hospital on a hill about half a mile from the station. This hospital, No. 4 General Field Hospital—No. 1, No. 2, and No. 3 being at the Cape side—has been established in this locality since my last visit, which was in December. It is under the command of Colonel Clery, R.A.M.C., principal medical officer of the lines of communications, his staff consisting of Major Lucas, R.A.M.C. (secretary and registrar), Major Hackett, R.A.M.C., and Major Fryer, with a lieutenant, a quartermaster, and ten civilian surgeons. There are also eight nurses of the Army Nursing Service attached.

The history of this hospital may be summed up by briefly detailing the diary of the days following its arrival here. The Mooi river is a rapidly flowing stream which at this spot is about 50 yards in width. The railway station is on its left bank and the country runs away from its right bank in large undulating grass downs resembling Salisbury Plain. About 50 yards from the railway station there is a small railway hotel, about a quarter of a mile from the left river bank, which is used as a hospital for officers (see plan).

Jan. 6th.—Arrived at Mooi river and surveyed the ground for No. 4 Hospital on the right bank of the river in the evening.

Jan. 7th.—Pegged out the ground for marquees and bell-

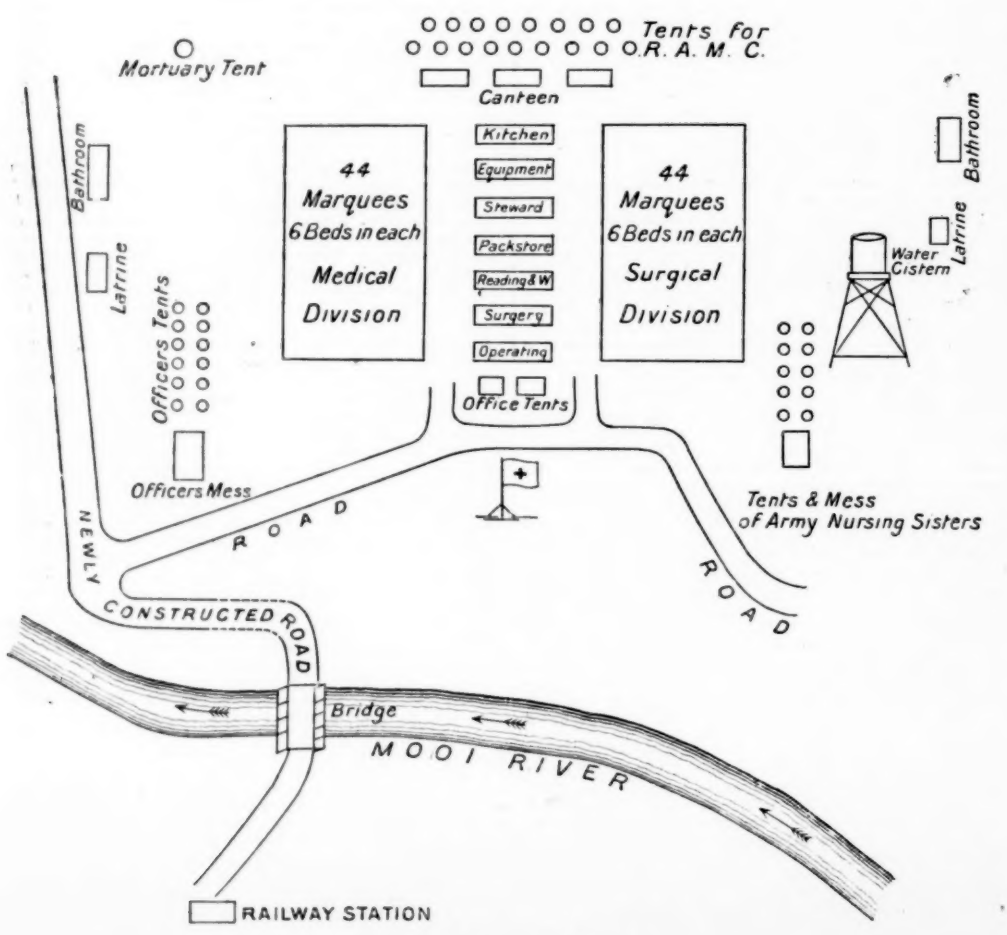
tents and unloaded part of the hospital equipment from the train. Only five waggons could be used for conveying equipment across the river to the site chosen on account of the fear of blocking the narrow fording-place in the river.

Jan. 8th.—Continued the unloading and erection of the tents.

Jan. 9th and 10th.—Bad weather having set in the river became so swollen that the ford was impassable and it became necessary to send the waggons round by a devious route of four miles. The strength of the rank and file, which had been two warrant officers and 143 non-commissioned officers and men on arrival, was diminished by the withdrawal to Spearman's Camp of 50 non-commissioned officers and men. This camp was also supplied with one officer of the Royal Army Medical Corps and six civil surgeons, leaving a very diminished staff to carry on the work of organisation.

Jan. 11th.—Took over the Railway Hotel and equipped bedrooms for the accommodation of 30 officers. 48 marquees were equipped and got ready this day and the first sick party, consisting of 300 patients, arrived.

The hospital at present is situated upon the gentle slope of a grassy hill. It consists of 88 marquees for the accommodation of sick and wounded. Each marquee contains six beds. The floors are covered with tarpaulin. The arrangement of the marquees is most excellent, the hospital being divided into two halves, medical and surgical, with a space between. In this space are situated the administrative tents and buildings. These buildings are of galvanised iron and they have been erected very rapidly by the Royal Engineers. They are not all yet completed, but several of them are in working order, notably the kitchen, which is a commodious structure fitted with water taps and boiling cisterns for sterilising the drinking-water. The surgery, the operating room and the x-ray room, the reading- and writing-room, the pack store, the steward's store, and the equipment store, which at present occupy marquees, will be provided for by buildings. On each flank of the hospital there is situated a bath-room containing four large baths and also a latrine provided with buckets. The water is laid on by pipes in the bath-rooms. A large water cistern has been erected upon a 50-feet platform, from which the water is carried in underground pipes by gravitation. The supply of water to the cistern is pumped up from the river by a pumping apparatus on its bank. The drinking water is filtered through sand and cloth in a special cistern. It is conveyed by pipes to the kitchen where it is boiled and afterwards passed through a Berkefeld filter. It is then aerated through charcoal filters and distributed in special drinking vessels to the patients. An operating room is at present being constructed; it will be of ample dimensions, so that two operating tables can be conveniently used at the same time. One corner of this building is being cut off to be converted into the x-ray and photographic room. A general idea of the arrangements may be obtained from the following plan:—



Plan of Number 4 General Hospital at Mooi River.

I append notes of several very interesting cases which are at present under treatment in No. 4 General Hospital, the patients having been conveyed there from the various field hospitals at the front. These notes were taken on the occasion of my inspection of the hospital on Jan. 31st and represent the condition of the wounded which was noted on that date.

CASE 1. *Wound of the head and the neck.*—Private —— was wounded on Jan. 21st at a range of 800 yards. The entrance wound was precisely through the centre and middle line of the nose immediately beneath the nasal suture. The wound of exit was behind on a level with the sixth cervical spine and about an inch to the right, the bullet having passed in its course through the base of the uvula close to its junction with the soft palate. The symptoms were bleeding from the mouth and epistaxis for about a week and some difficulty in swallowing. There are no other symptoms at present except headache and some dilatation of the left pupil. The wounds healed and on the 31st the patient was apparently otherwise perfectly well.

CASE 2. *Wound of the neck and the lung.*—Private —— was wounded on Jan. 24th from an unknown distance. The entrance wound was at the anterior margin of the right trapezius two inches above the centre of the right clavicle. The wound of exit was on the left side in the tenth intercostal space two and a half inches from the middle line. The symptoms were hæmoptysis for two days after the injury. He has felt perfectly well ever since the wounds healed.

CASE 3. *Wound of the lungs.*—Private —— was wounded on Jan. 20th from a distance of about 700 yards. The entrance wound was at the upper part of the left posterior axillary fold. The wound of exit was at the ninth intercostal space on the right side, five inches from the middle line of the back. There was slight hæmoptysis from the receipt of the injury up to the 31st. The temperature was normal and there was slight dyspnœa. The patient was progressing favourably and the wounds had healed.

CASE 4. *Shell wound of the chest wall, involving the lung and pleural cavity.*—Private —— was wounded on Jan. 23rd from an unknown distance by a portion of a shell. There is at present a large shell wound, about seven inches long by three inches in width, running from the right nipple almost transversely backwards, occupying the region of the fourth, fifth, and sixth ribs, which have in part been carried away, leaving a large chasm. The pleural cavity has been freely opened, the lung being exposed. The patient states that he lay in a trench on the field from 2.30 P.M. until 5 P.M. before he could be attended to. He was carried to the hospital at 12.30 that night. On the 31st there was no cough or dyspnœa and the temperature was normal. The man states that he has suffered very little indeed from this extensive injury at any time and that he had no shortness of breath or spitting of blood and no evidence of any shock could be obtained. In the bottom of the large open wound the lung is plainly visible and the parts are beginning to granulate. The man looks extremely well and says he has nothing whatever to complain of.

CASE 5. *Wound of the lung.*—Private —— was wounded on Jan. 20th from a distance of 600 yards. The entrance wound was at the sixth interspace on the right side, five inches from the median line. The wound is of the small characteristic variety and is still unhealed. It is not known where the bullet is lodged. He will be x-rayed. There were no symptoms beyond slight hæmoptysis and on the 31st he was convalescent.

CASE 6. *Wound of the lungs.*—Private —— was wounded on Jan. 20th at a range of 1600 yards. The entrance wound was immediately over the second left rib one and a half inches external to the margin of the sternum. The wound of exit was through the eighth right interspace one and a half inches below, and slightly internal to, the inferior angle of the scapula. The symptoms were slight hæmoptysis for two days with slight cough and dyspnœa. On the 31st the man's condition was good and the wounds were healed.

CASE 7. *Wound of the hand, the lung, and the abdomen.*—Private —— was wounded on Jan. 24th from an unknown distance. The entrance wound was of the characteristic circular type and was situated three and a half inches vertically below the right nipple, the bullet having first traversed the second right metacarpal bone. The wound of exit was slightly to the left of the second lumbar spine. The symptoms were *nil* and the wounds had scabbed over. On the 31st the man was quite convalescent and had nothing apparently the matter with him. The entrance wound in the finger is as clean cut a circle as that in the chest.

CASE 8. *Wound of the lungs.*—Private —— was wounded on Jan. 21st from an unknown range. The entrance wound was one and a half inches above the clavicle at the outer border of the sterno-mastoid on the right side. The wound of exit was one inch above the posterior axillary fold on the left side. There was also an exceedingly oblique fracture of the left clavicle. This fracture was not in the bullet track, but the man persisted in ascribing the fracture to the bullet. Its obliquity contradicts his opinion. He denies a fall or any other accidental violence. The symptoms were *nil* beyond the pain of the fractured clavicle.

CASE 9. *Wound involving the lung and the abdomen.*—Private —— was wounded on Jan. 20th at a range of about 1000 yards whilst lying in a prone position. The entrance wound was on the anterior surface of the right shoulder two inches below the acromion. The bullet was cut out about two inches below the centre of the fold of the right buttock, having lodged immediately beneath the skin. It had thus raked, as it were, the whole length of the man's trunk fore and aft. There was hæmoptysis for three days after the receipt of the wound. On the 31st the patient was convalescent, the wounds having healed. No further symptoms of any kind occurred.

CASE 10. *Wound of the abdomen.*—Captain ——, R.A.M.C., was wounded on Jan. 23rd near Colenso at a distance of 100 yards whilst he was bending over in the act of dressing a wounded man. The wound of entrance was through the right rectus abdominis muscle, one inch below the costal margin and one and a half inches from the median line. The wound of exit was one inch above and one inch behind the centre of the right iliac crest. The symptoms were *nil* throughout, although it was difficult to suppose that the ascending colon escaped perforation. This officer watched himself carefully for symptoms which he believed must inevitably arise. He knew where the entrance wound was almost directly, but did not localise the position of the exit wound for two hours afterwards. He tried to finish the dressing of the wounded man but became giddy and had to lie down. He then remained perfectly still on his back for 12 hours, suffering much from the constrained position but nothing from his wound, and refused to take some water offered to him by the Boers. Two other men close by, who were also shot through the abdomen, did drink, although strongly advised by him not to do so, and soon began to suffer very much, one vomiting constantly. The captain had only eaten a little porridge for breakfast ten hours before and took nothing by the mouth for 48 hours afterwards. On the 31st he was convalescent and he had had no abdominal symptoms throughout.

CASE 11. *Wound of the pelvis and the rectum.*—Captain —— was wounded on Jan. 23rd at a range of 500 yards. The entrance wound was an inch below and an inch behind the tip of the right trochanter major. The wound of exit was half an inch vertically above the tip of the left trochanter major. There were immediate and copious bleedings from the rectum and for several hours following; subsequently there was a thin, bloody discharge with tenesmus. On the 31st the external wounds were healed. There was considerable ecchymosis present in and around the anus and buttocks. There was no evidence of any local inflammatory disturbance. This officer said he felt as if he had been again operated on for piles. On the 31st he was quite convalescent. Without doubt the bullet traversed the rectum.

CASE 12. *Wound of the pelvis and the thigh.*—Private —— was wounded on Jan. 20th at a range of 700 yards. He was lying prone when hit. The entrance wound was three inches behind the anterior superior iliac spine on the left side and an inch below the crest of the ilium. The wound of exit was at the perineal margin, two inches behind the scrotum on the left side. The bullet entered again at the junction of the upper and middle thirds of the right thigh, a little posterior to the adductor longus. It emerged finally near the upper end of the outer boundary of the right popliteal space. There were no symptoms and on the 31st he was convalescent. The position he lay in probably saved the testicles from injury.

CASE 13. *Wound of the thigh and the femoral artery.*—Private —— was wounded at Spion Kop on Jan. 21st at a range of 1100 yards. The entrance wound was immediately behind the tensor vaginæ femoris four inches above the left knee. The exit wound was on a little lower level on the inner side. Pulsation could be felt in the

posterior tibial artery and in the dorsalis pedis artery. The bullet passed between the bone and the femoral artery, making a large wound in the artery on its anterior aspect. He was admitted to hospital on the 26th and damage to the femoral artery was diagnosed as there was a pulsating swelling with a loud bruit over the lower part of Hunter's canal. On the 28th an incision was made over the lower portion of Hunter's canal and the wound of the artery was found to be just above the opening in the adductor magnus. There was a very small amount of extravasation of blood present. The artery was ligatured above and below the wound and divided between. The anastomotica magna was also ligatured. On the 31st the patient was progressing satisfactorily and collateral circulation was fully established. The small amount of extravasation from a large wound in a large artery was noteworthy.

CASE 14. *Wound of the thigh, the leg, and the tibial nerve.*—Major —— was wounded on Jan. 24th at Spion Kop. The entrance wound was immediately behind the insertion of the right biceps femoris tendon after grooving the skin of the thigh for six inches, leaving a narrow long black scabbed groove. The wound of exit was immediately behind the inner border of the tibia three inches above the internal malleolus. The anterior tibial nerve was injured, drop-foot and anæsthesia in the area of the nerve distribution being present.

CASE 15. *Wound of the knee.*—Private —— was wounded on Jan. 21st from an unknown distance. The entrance wound was beneath the outer margin of the left patella about the junction of the upper and the middle thirds of the bone. The wound of exit was just anterior and internal to the semitendinosus tendon opposite the joint line. The limb was in a splint but was now capable of flexion at the knee. There was some effusion into the joint, but no tenderness or rise of temperature. The wounds were healed on Jan. 31st and the man will doubtless have a perfectly useful joint and limb.

CASE 16. *Wound of the axillary artery and the musculo-spiral nerve.*—Private —— was wounded on Jan. 15th at a range of 600 yards. The entrance wound was half an inch vertically above the reflection of the anterior axillary fold from the chest wall on the left side. The exit wound was at the reflection of the skin from the thorax to the arm behind on the same side. On his entry into the hospital the patient was suffering from left drop-wrist, but there were no signs of a damaged brachial artery (the radial pulse being good). Sensation was lost in the musculo-spiral area of the fingers. The triceps acted. On the 26th an incision was made to expose the musculo-spiral nerve. There was no suspicion of the artery having been damaged, the radial pulse on that side being normal, but on isolating the nerve a wound was found in the side of the artery about a third of an inch long to which the nerve had been adherent by a small clot. There had been no general extravasation of blood. The nerve was found to have been pierced by the bullet, but a stout bundle of nerve-tissues remained intact on either side. The vessel was ligatured in two places and cut between. The nerve was not interfered with. On the 31st the sensation was returning in the fingers, but the drop-wrist was still present. It is remarkable that the bullet should perforate a nerve of this size and not completely sever it.

CASE 17. *Wound of the lung.*—Private —— was wounded on Jan. 20th at an unknown range, probably 2000 yards. The entrance wound was immediately below the left sterno-clavicular joint. The wound of exit was at the eleventh intercostal space on the same side, one inch from the middle line of the back. The symptoms were *nil*. On the 31st the man appeared to be perfectly well.

CASE 18. *Wound of the pelvis.*—Private —— was wounded on Jan 20th at a range of about 1300 yards. The bullet entered two and half inches posterior to the tip of the left great trochanter, emerging one and a half inches vertically below the right posterior superior iliac spine. There was considerable rectal hæmorrhage but nothing could be felt on a rectal examination. The patient otherwise felt perfectly well. In this and other similar pelvic injuries it is difficult to understand the limited amount of damage apparently inflicted.

CASE 19. *Wound of the thigh, the pelvis, and the femur.*—Private —— was wounded on Jan. 24th at a range of 3000 yards. The entrance wound was at the central portion of the right gluteal fold. The wound of exit was two inches below and an inch in front of the apex of the left great trochanter. The base of the trochanter must have been traversed by the bullet, but there was no evidence of a complete fracture. There was a great amount of thickening and tenderness of the bone in the injured area, but no solution of the continuity of the femur. The external wounds were healed.

CASE 20. *Wound of the knee.*—Private —— was wounded on Jan. 21st at a range of 1400 yards. The entrance wound was immediately above the centre of the upper border of the left patella. The wound of exit was at the lower angle of the popliteal lozenge. There was slight effusion into the knee-joint which still persists, but there is considerable mobility already present.

CASE 21. *Wound of the lung.*—Private —— was wounded on Jan. 20th at an unknown range. The entrance wound was a little external to and beneath the left sterno-clavicular joint. The wound of exit was at the ninth left costal interspace, immediately behind the posterior axillary line. There was hæmoptysis for three days, but there were no other symptoms. On the 31st he was quite convalescent.

These cases are for the most part sufficiently remarkable. The greater portion of the wounds were caused by the Mauser bullet and mostly all presented the characteristic features—a small circular slightly depressed area of the size of O covered by a black scab. The exit wounds were often quite similar, but a little larger, sometimes presenting a scar like an incised wound and difficult to discover. When I saw them a week or ten days subsequent to the injury they were for the most part healed. How these bullets fail to damage vital structures lying immediately in their path is nothing short of marvellous. The proportion of fatal chest wounds to those which are recovered from is believed to be small, but what the proportion precisely is cannot as yet be ascertained. It is abundantly clear that one lung and often both lungs may be traversed and in many directions without causing grave symptoms and often without producing any symptoms of lung injury at all. The large number of perforating abdominal wounds which are recovered from give pause to operative procedure in that direction, and the indications for operation in such cases must be completely revised. Wounds of the knee-joint seem also to be recovered from with a facility of which we have had no previous experience. The same may be said of wounds implicating other joints.

WILLIAM MAC CORMAC.

Mooi River, Feb. 1st.

(FROM OUR SPECIAL CORRESPONDENT AT THE BASE.)

THE complete lull in the fighting on this side has had the effect of keeping our hospitals at the base comparatively empty, and nothing of moment has occurred since my last letter. The cases coming down now are mostly medical and are generally traced to exposure to the sun or to the use of unfiltered water. On the other hand, the hospitals on the Natal side are pretty full as the result of the Spion Kop and Acton Homes engagements.

The accompanying particulars of a case which I mentioned in a previous letter may be of interest to the readers of THE LANCET as illustrating the eccentricities of Mauser bullets.

Lance-Corporal —— of the Black Watch, aged 20 years, was wounded at Magersfontein on Dec. 11th by a Mauser bullet. The man was wounded from an unknown distance whilst lying on his face preparing to fire. The entrance of the bullet was over the left malar bone at its junction with the temporal bone. The wound, which was small and round, completely healed. The exit wound was about the lower angle of the right scapula, and this also healed. The patient was admitted into the hospital on Dec. 15th. He was entirely nervous on admission. There was but slight movement in all the muscles of the right arm, and sensation of this limb was much impaired. The sensation and motion of the right leg were good. The left arm was completely paralysed and the sensation was very much impaired. The patient could move the toes of the left foot, but the sensation of the left leg was much impaired, especially towards the extremity. The bladder and bowels had both emptied themselves automatically. As to respiration, the action of the intercostals was impaired on the left side. The patient complained of pain over the seventh cervical spine, and also tenderness in that position. There was also some tenderness in the left sub-maxillary region. His facial muscles were intact. He lay on his back with his

head turned to the right side. There were no trophic changes anywhere. On Dec. 18th the patient had recovered tone in the bladder and the sphincter, and respiration, both thoracic and abdominal, was good. On the 20th the bladder and the bowels could retain their contents much better and the patient could move his left leg fairly well. Sensation also was improved. By the 25th there was a slight improvement in the sensation of the left arm and the left leg was still improving. There were no other symptoms. The patient was convalescent on Jan. 1st, 1900, and was sent home to Netley. At this time motion in the left arm was improving daily and sensation was good.

Enteric fever has claimed another victim in Major C. P. Walker, R.A.M.C., who died in Natal, aged 40 years. I am glad to say that the last reports of Lieutenant W. Jagger, R.A.M.C., who is suffering from the same disease, are favourable.

To-day (Feb. 7th) the *Spartan* brought down from Durban 370 wounded officers and men who will be distributed amongst the various general hospitals. The *Lismore Castle* is *en route* for Cape Town with 180 more. These are some of the 1020 wounded in General Warren's fights at Spion Kop, where, as you know, the killed, wounded, and missing amounted to the serious total of 1700, by far the heaviest losses we have sustained in any operation up to date. The enteric fever at Modder river and at Orange river is still very bad, as many as 70 cases being reported from the former place. The *Kildonan Castle* is leaving to-day for England with a large batch of sick and wounded and I hear that the outward transports have again dropped a great number of men for treatment in the Cape Town hospitals. I suppose that this is unavoidable to a certain extent, but still I cannot help thinking that more care might be exercised in the medical examination of men destined for duty at the front before they leave England, as some of these cases, notably cases of hernia, might easily have been detected prior to embarkation. These patients take up badly wanted accommodation in the various hospitals, and in many cases they never get further than the wards, from whence they are sent home again, costing the country money that might well be expended in other directions.

The frightful mortality amongst officers in the recent engagement, there being no less than 32 killed, 66 wounded, and six missing, seems to the lay mind to point to unnecessary exposure on their part, or to the enemy's well-known sharpness in detecting them in spite of the various means taken to make their appearance as similar as possible to their men. You will have received a more detailed list long before this reaches you; in fact, our last information regarding casualties was taken from a London paper. I have not had an opportunity of inspecting the new ambulance train yet, but from what I hear it is very complete.

The *Princess of Wales* has left for Netley with sick and wounded. She will be followed by the *Avoca*, which leaves to-day.

Claremont, Feb. 7th.

THE TREATMENT OF SOME FORMS OF APPENDICITIS AT PLOMBIERES WITHOUT OPERATION.

BY SKENE KEITH, M.B., C.M., F.R.C.S. EDIN.

THE account of one case will give a very good idea of in what the treatment of appendicitis at Plombières consists. The history of the case in question evidently dated back to an attack of peritonitis some 12 years ago, when the patient was 23 years of age. So far as the patient can remember she was confined to bed for at least two weeks. The abdominal pain was very severe. Complete recovery followed this attack, except that from that time there was a disinclination to go up many stairs, as this brought on a feeling of tiredness in the right side and thigh. Indeed, on one occasion after going up a number of stairs while sight-seeing abroad, the patient was unable to sleep one night on account of the pain in the right side. In the autumn of 1895 she moved into a larger house, and although she felt the longer stairs a fatigue and went up and down as seldom as possible she was able to learn to bicycle in the spring of the following year and could go for from 20 to 30 miles in a day without setting up any of the pain in the side or in the thigh. In the beginning of 1896 she began to suffer from pain in the right side, and on examination the chief seat of the pain and tenderness was found to be midway between the umbilicus and the right anterior superior iliac spine. The bowels were attended to, some β naphthol was ordered, and a belladonna plaster was put over the whole of the right side. This treatment was followed by marked improvement, but the patient broke down on a journey to Italy and had to remain in Paris. At this time there was no pain, she was simply tired out. For about a month after coming back from Paris she was perfectly well, but towards the end of May the pain returned. On examination the appendix could be felt with the greatest ease. It felt almost as thick as my thumb. I do not think that it was in reality anything like so large as this, for my experience has been, while operating, that the appendix is actually smaller than it feels from the outside. This has also been my experience with diseased ovaries and Fallopian tubes, and I consider that one has always to discount a considerable amount of the apparent size. The patient was kept as quiet as possible and the treatment which had before been successful was renewed. The very slightest irregularity of the bowels was invariably found to increase the pain. A course of baths at Plombières was recommended, but the patient did not wish to waste her time by "going in for" a water-cure. Another physician was consulted and he independently advised a visit to the same place. The patient was undoubtedly of a gouty habit, and had there been no previous attack of peritonitis I would have diagnosed simply a gouty irritation of the appendix.

The patient went to Plombières at the beginning of August, 1897. The treatment consisted in 21 baths, taken one every day. She lay for from 40 to 50 minutes covered to the neck in the water, at not less than 34° C. and not more than 36° C. After the first few baths and for the last 10 minutes of each succeeding one the *douche Tivoli* was used. This is simply a spray of warmer water coming out of a rose somewhere about an inch in diameter, which, passing through the water of the bath, is allowed to play against the affected part like a feather. This is a most important point. If it be used too strong it seems to do harm, as there is almost certain to be an attack of pain when the douche is improperly used in this way. After the bath the patient had to lie down in bed for half an hour. If a patient goes to sleep at this time there is said to be a headache in the afternoon. Before leaving the patient was told by the medical officer (Dr. Bottentuit) and the bath attendants that she would require to return twice more. This she firmly resolved she would not do, as the treatment was so simple that she had absolutely no faith in it. Possibly owing to not being very careful at first the pain went away slowly and there were many complaints that the treatment at Plombières was nothing but "humbug." But by the beginning of the year 1898 the patient was quite well and was losing the habit of considering before going upstairs whether she really required to go. In the middle of June she suddenly broke down after bicycling about 12 miles and had to drive home. Pain and tenderness at McBurney's point were again found, though the appendix itself could not be made out. A second visit was therefore made to Plombières in August, much to the triumph of the bath attendant. Exactly the same treatment was carried out at this second visit as at the first. It is now 14 months since the patient felt any discomfort in the region of the appendix. She has bicycled 30 miles at a time and she can go upstairs without giving it a thought. For the first time in her life she has had this winter an acute attack of gout in her foot and still the appendix is giving no trouble.

One case in particular, where I removed the appendix, contrasts very markedly with that which I have just narrated. The history was simply of one acute attack followed by rapid loss of health and strength, accompanied by pain in the right side. The patient was a medical man, and it was evident that he would soon have to stop work altogether. There was no difficulty in feeling the appendix, and at the operation one narrow band of adhesion was found which bent the appendix at an acute angle, and in this way had first caused congestion and then inflammation of the appendix. As in this case the cause was a mechanical one no course of baths or any general treatment could have been expected to do any permanent good. Some years afterwards the patient told me that he had forgotten the

illness before the operation and the illness at the time of the operation, but he said that the misery experienced while his strength was returning was a thing he could never forget.

Plombières does not seem to be sufficiently known to the medical profession. It is probably the best place in the world for the majority of cases of chronic diarrhœa, and of late years it is coming to be recognised as a place where many cases of appendicitis may be cured without operation. The cases which do best are probably those where the appendicitis is, in part at least, due to some general condition. Quite a considerable number of patients have been sent who have not been cured of their appendicitis by the removal of the appendix! Many people may not care to go to France for pleasure at the present time, but as the healing art does not require to pay attention to political matters a short account may be of interest. Indeed, the place seems to be so little known that a hospital surgeon who had himself suffered from appendicitis had never even heard of it.

This bathing station is situated in a valley 1400 feet above sea-level, on a short branch line of nine miles, midway between Nancy and Belfort, and can be reached either directly from Calais or *viâ* Paris. English ladies travelling in the restaurant train from Paris had better secure their seats in the restaurant car by sitting in them when the train is full. The villagers are conservative; they oppose every innovation and have so managed that the railway ends at Plombières and can apparently never be continued beyond it. To do this they had to take what I am told was the finest part of the park which had been laid out by Napoleon III. at the time he had the new baths built. Napoleon's old bath-man is still in attendance, having put in 37 seasons without missing one day in all those years. One old woman over 80 years of age, who lives in the main street close to the old Roman bath, has never seen the railway or the new baths, though both are within one-third of a mile. She is, however, something of a character. The baths themselves are fairly good and there is an abundance of both hot and cold water. Indeed, the water comes up so hot that it has to be taken to a reservoir up the hill to cool it before it can be used. At one of the older establishments, mostly used for rheumatism, one can go down and see the water bubbling up. The air there is so hot and steamy that it is somewhat difficult to penetrate to the lowest depths, and ladies should not go down when they have on any clothes which might spoil with damp.

The treatment for appendicitis appears to be what I have already described, with, in addition, the use of the *douche ascendante* when there is constipation. One peculiarity of the *douche Tivoli* is that the water feels warm when directed against a healthy part of the body but not when it is playing against the affected spot. During the course of the 21 baths the patient is, as a general rule, depressed and miserable, though this seems to be less marked when the weather is warm. The great thing required is to be content to do nothing. Patients may apparently lie in bed, sit at the band or in the casino, and may drive, but must not exert themselves at all. For anyone who likes to be dull and doing nothing I can recommend Plombières, although it is not the dullest of bathing stations. There is, however, one great objection to the place, and one which could be easily remedied. It is that no provision has apparently been made for providing proper food for those suffering from disorders of the alimentary tract. The medical officers put the best face on it and say that the waters are so beneficial that the quality of the food does not matter, although the meat provided is notoriously so hard as to be almost uneatable. I have travelled much in France and do not expect to find French meat very tender, but it certainly was a surprise to find the meat which I got at Plombières—a place devoted in large part to the treatment of gastric and intestinal disorders. There are several hotels and many lodgings and in one of these hotels the food was very good indeed. Although a man could go alone it would be too dull for a lady without a companion. I do not mean to say that a lady could not go alone, but to send any lady ill to start with and feeling worse at some part of the course would not be a very kindly act. It is not a very expensive place; the ticket from London direct by Calais is £4 12*s.*; no return tickets are issued. The rate at an hotel not attached to the new bathing establishment and within two minutes' walk of the baths per day and without wine is 10 francs and upwards. Baths and the *douche Tivoli* cost under 5 francs or less at the other bathing establishments in the town. Some of them seemed to be almost as comfortable as the new baths and the arrangements for the supply of water are exactly the same. A man who could take his baths without a break could do the whole course from London and back for about £32, including the medical officer's fees, "tips," and ordinary wine, but excluding the casino. The majority of ladies would not be able to get through a course quite so expeditiously, and a very pleasant way of utilising the break which usually occurs is by driving to Gerardmer and the Schlucht. Gerardmer is situated on the lake of the same name, over 2000 feet above the level of the sea. It is a very lovely spot and is said to be bracing; but it has the disadvantage of being very full in summer, too full, indeed, for comfort. From Gerardmer to the Schlucht, over 4000 feet high, is a drive of about three hours, through pine woods and passing hills and lakes. The German hotel, much better situated than the French, is about one mile across the frontier, and the view from it embraces the whole of the Münster valley. The return drive to Gerardmer can be made, in part, alongside the lakes instead of high above them.

The bathing season does not begin till June 1st and finishes in the end of September, July and August being the two months when the village is full of visitors and when literally there is not an empty bedroom. During these two months it is very necessary to engage rooms before starting. The beginning and the end—especially the end—of the season are to be avoided. Even the band stops playing before the end of September, while the theatrical company leaves at about the beginning of the month.

In my experience the treatment at Plombières is very successful in cases of chronic diarrhœa, in constipation (though at first sight this may seem peculiar), in mucous colitis, and in appendicitis. The baths—and the treatment is practically limited to baths, though many people drink a small quantity of water before lunch and dinner—are recommended for various other conditions, especially for rheumatism. Comparatively few English go to Plombières, though the numbers are said to be increasing.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

(*Continued from p. 565.*)

LORD LLANDAFF'S Commissioners point out that before it is possible to determine whether purchase of the metropolitan water companies' undertakings is likely to be financially advantageous to the water consumers it is necessary to consider how the price to be paid will be fixed. They do not think it likely that the price can be settled by agreement. In the year 1880 an attempt was made by Lord Beaconsfield's Government to purchase the undertakings and the agreements arrived at were afterwards held by Sir William Harcourt's committee to be unsatisfactory, and since that date no serious attempt has been made to purchase by agreement. Many years ago negotiations which were entered into between the New River Company and the City of London had no result. The details were confidential.

In the year 1896 Sir Arthur Arnold, who was then chairman of the London County Council, entered into some negotiations with the chairmen of the water companies. As the result of the conversations which he had with them he came to the conclusion that some of the companies would be willing to sell their businesses on reasonable terms and that the purchase might be effected by agreement. The surviving chairmen of the companies through their counsel denied that the impression left on Sir Arthur Arnold's mind was well founded and denied also that any approach to an agreement was made.

In the year 1890 a Select Committee of the House of Commons, which was presided over by Sir Matthew White Ridley, examined several Bills, amongst which was one promoted by certain London vestries and parishes, which proposed that a water trust should be formed for the acquisition of the companies' undertakings under the Land Clauses Act with certain modifications, and a Bill was also framed

to enable them to supply water from new sources. This Bill was not passed by the committee, but a special report was made on July 14th, 1891, in which it was recommended that the London County Council should be empowered to bring in a Bill constituting that body the responsible water authority for London and that they should be required to purchase alone or with the outlying authorities the undertakings of the eight metropolitan water companies, either by agreement or by arbitration within a fixed period. The London County Council considered the whole question and issued a report signed by Sir Thomas Farrer (afterwards Lord Farrer) in which they said that it was impossible to determine what should be paid for the water companies' undertakings without inquiry into the sources of supply and the nature and cost of new sources which might be necessary to replace or supplement those already existing, and these questions could not be determined by arbitration. It was contended also that an examination should be made as to whether the companies' charges were legal, whether their rating powers had not been stretched beyond the intention of Parliament, whether those powers might be reduced by Parliament, and whether competition with the companies might not be successfully resorted to. These questions, it was thought, would not be taken into account if purchase were conducted on ordinary arbitration terms, and if they were left out of account purchase would be likely to result in a manner unfavourable to the ratepayers and unduly favourable to the companies. This report was adopted by the County Council on Oct. 13th, 1891, and the Council declared that they were not able to accept the recommendations of Sir Matthew White Ridley's committee that they should purchase the companies' undertakings on the terms he suggested. A Royal Commission was then appointed to investigate the question of the London water-supply (the Balfour Commission), and when the Commissioners reported that the supplies in the valleys of the Thames and Lee were adequate in quantity and quality, subject to proper conditions of storage, filtration, and conservancy, the London County Council accepted the report "subject to criticism and to outlying facts and considerations," and Bills for the purchase of the water undertakings by the Council were introduced in November, 1894. In their Bills special clauses were inserted with regard to arbitration by which the arbitrators were required to have regard to the probability that the legal powers of a company as to taking water were limited; to discount the actual revenue because competition by other companies was possible; to revise the capital account because it represented obsolete works; to revise the revenue accounts in respect to repairs and renewals, and to take into account the likelihood of some competing body existing in the future. The arbitrators were not to allow any claim for back dividends for more than six years, nor to make allowance for a possible future increase of rateable value in unaltered premises, nor to give compensation in respect of compulsory sale. The Bill containing this clause was referred to a committee of the House of Commons (Mr. David Plunkett's Committee). The committee showed a manifest disinclination to accept the arbitration clause and the County Council proposed an alternative one which provided that arbitrators should not be precluded on any legal objection from considering any matter laid before them by either party and should deal with all the contentions of the parties as fully and effectually as could be done by Act of Parliament. The Commissioners suggest that this provision would apparently have enabled the arbitrators to decide upon the value without regard to the strict legal rights of the companies. Mr. Plunkett's committee did not give any final decision on this clause.

In the year 1897 the County Council again introduced Bills into Parliament for the purchase of the water companies' undertakings, and these Bills contained clauses giving unfettered discretion to the arbitrators and providing that they should not be precluded by any legal objection from considering all the contentions of the parties. On the second reading these Bills were rejected.

In 1899 the County Council again introduced a Purchase Bill in which they restored the clause which had been introduced in the Bill which was considered by Mr. Plunkett's committee. The Commissioners referred to the fact that during their inquiry they asked the London County Council whether that body were of opinion that the water undertakings could with advantage be purchased without any special terms of arbitration. The answer, which was very carefully drawn up, was given in writing. It has already been published *in extenso* in THE LANCET. The history of the arbitration clauses leads to the inference that the County Council think that in the interests of ratepayers and consumers purchase should not be conducted under ordinary terms of the Land Clauses Act, and the Commissioners discuss in some detail the contentions of the London County Council. 1. Stress was laid on the fact that the London water companies have no monopoly but are liable to competition. 2. It was contended that the companies are not entitled to charge the maximum rates and that a pledge had formerly been given to Parliament that these charges would not be made in the majority of cases. In answer to this the Commissioners point out that none of the special Acts contain any words restricting the companies from charging their maximum rates and that whatever pledge could be inferred from the language of the counsel for the water companies it was given with reference to a different scale of charges and one which was rejected. 3. It was contended that the capital of the companies should be revised because it included items which were not sanctioned by Parliament, and that it included sums spent years ago on works which had been abandoned or become obsolete. The Commissioners point out that the auditor of the London County Council gave it as his opinion that the capital of the companies as a whole represented "a going concern in good working order." 4. It was contended that the companies devoted too much of their annual revenue to dividends until they were able to pay the maximum rate to which they were entitled and that afterwards they were more lavish in their expenditure on improving their works. The case of the West Middlesex Company was brought prominently forward, but the Commissioners thought that the detailed account of expenses given by the secretary of the company which showed how the increase of expenditure had arisen proved that it was an "accidental coincidence" that the increase in capital outlay had occurred when it did. 5. It was contended that no compensation should be given to the shareholders of the companies in case of purchases for the amount due to them for back dividends. The Commissioners opine that the legal rights of the companies to pay back dividends to their shareholders are incontestable. 6. It was contended that Parliament did not intend that the rating powers of the companies should be "stretched to the utmost." The Commissioners state that in their opinion the check which Parliament intended to make is the one which they actually did make—that is, a limitation of the dividend—and that as soon as the maximum dividend is reached, the back dividends paid up, and the reserve fund built up the extra receipts must be applied to the reduction of charges made to the consumers for the water supplied. In the case of the New River Company this check has not been imposed. The company have not been restricted from making their full statutory charges. The rating powers of the companies are various and ambiguous and the authorised charges increase with the rateable value although the premises may not be altered. In the case of two of the companies, however (the Chelsea and the Kent), the increase in rateable value has had the effect of lessening their receipts, as they themselves have had to pay more on the increased assessments imposed on them than they have gained by assessments imposed on their customers. The Commissioners say that variation in the water charges allowed by the statutes of the different companies do not supply good grounds for attacking their revenues as inequitable. In case of purchase by arbitration it appears that any arbitration to ascertain the value of the companies must proceed upon the basis of their statutory rights and that the arbitrator could not take upon himself to consider whether Parliament might curtail them and then assign to the companies a lower compensation on the ground of the probability of such interference with existing statutory rights, and it is precisely in order to enable the arbitrator to take that course that the special arbitration clauses have been framed. The Commissioners, however, assume that if the policy of purchase be adopted the price of the undertakings should be determined by an arbitration conducted on the lines of the Lands Clauses Act, although possibly, in view of the magnitude of the undertakings, the tribunal might be differently constituted.

The Commissioners, having come to the conclusion that should the water companies undertakings be bought it should be done under the conditions laid down by the Land Clauses

Act, proceeded to consider what the financial results of arbitration would be likely to be.

The advisers of the London County Council, they point out, have looked with some apprehension upon the possible results. In the Bill which was introduced by the London Vestries in 1891, by which it was proposed that the undertaking should be purchased by a water trust and that the amount of payment should be settled under the Land Clauses Consolidation Act, the Parliamentary Committee of the County Council reported that there were *primâ facie* grounds for believing that such a method of purchase would prove unsatisfactory, because (1) recent Stock Exchange quotations had been unduly large; (2) unduly large dividends had been maintained; (3) the works and plant of some of the companies were obsolete; (4) no sufficient allowance had been made for depreciation; and (5) a heavy outlay would have to be made for establishing a new supplementary system of supply.

The Water Committee of the London County Council, after considering the report of their Parliamentary Committee, came to the conclusion that if the matters mentioned were left out of account in valuing the undertakings the people of London might be made to pay a very large amount for the existing undertakings and then find it necessary to spend from 10 to 20 millions more money in providing a new supply. Such a purchase, therefore, they thought should be resisted at all hazards. And, again, on Dec. 5th, 1895, their Parliamentary Committee reported to the London County Council that if the arbitration clause which they wished to put in was not inserted the arbitrator might be able to make an allowance for "compulsory sale" and for back dividends, and that therefore the purchase should not be undertaken in that case without full consideration of the probable financial results.

The Commissioners report that they had not the advantage of hearing any estimate as to the probable cost of purchase and that therefore they found it necessary to form for themselves the best estimate they could as to what would be the award of a fair and just arbitrator, acting on the usual terms of arbitration in cases of compulsory purchase and valuing the undertakings of the water companies at what they are worth to the vendors, having regard to their existing rights and taking into account the existing advantages and disadvantages of each company.

The estimate must in the first place be made on the existing net income of each company. The arbitrator ought next to consider whether the income is stable or unstable and in doing so he would have to find out what future capital expenditure would be necessary to maintain the income, bearing in mind that the companies are under an obligation to maintain the proper supply of water for the whole of their respective districts. The shareholder ought to receive a sum sufficient to purchase an equally good security producing the same income which he was getting from his water shares. A calculation made on these lines would result in neither loss nor gain to the purchaser, who would have the equivalent, and no more than the equivalent, for what he paid; and if the purchaser were able to borrow money on security of rates as well as water charges, and if he had, moreover, the option of paying in cash the amount of compensation awarded, he might obtain an advantage from the first from the fact that he could borrow money at a lower rate of interest than the water shares were now earning.

In the purchase of the undertakings the arbitrator would have to bear in mind that in some companies there was possibly a prospective increase of income, for which an arbitrator should make allowance. On the other hand, there might be companies in which the income was likely to diminish. "Assuming a claim for prospective increase were established the arbitrator would have to ascertain its true value and to discount that value in respect of the present payment."

It is usual in the case of unwilling sellers that some compensation should be made for compulsory sale, but nothing in the Lands Clauses Act requires an arbitrator to award anything for this, and it is not correct to say that any custom has grown up under the Act which binds arbitrators to make such an award. It is true that in some cases awards have been made because of the compulsory character of the sale as a *solatium* to the owner dispossessed of property to which associations of family or personal interest attached. But it would be improper for an arbitrator to give any compensation in the nature of a *solatium* of that kind for deprivation of water shares. The shareholders would be entitled to be recouped for any delay which might occur in finding an equally good investment yielding the same income and to be recouped for the cost of the re-investment. The amount which should be allowed would depend on the character of the shares of the particular company concerned, and although it could hardly be estimated it would probably be comparatively small.

Should the undertakings be purchased by a public authority it would be according to custom that a sinking fund should be set aside by the purchasing authority to repay the amount borrowed within a certain number of years. It would, of course, be within the power of Parliament to allow a purchasing body to dispense with such a sinking fund, but this would be contrary to precedent.

Considering, however, the magnitude of the operation it might not be unreasonable to allow the operation of the sinking fund to extend to 80 or even to 100 years, should the sinking fund be considered necessary. Unless the purchased income exceeds the interest on the purchase money the whole of the annual charge which would have to be met for providing that fund would have to be got either by increasing the water charges or by a special rate—i.e., by making the water consumer pay more for water or by imposing a new burden on the ratepayer, whether he consumes water or not. At the end of the time allotted for the operation of the sinking fund great relief would be given to the community, but in the meantime for many years an increased burden would have to be borne.

The Commissioners pass on to consider to what extent it is likely that the expense of a sinking fund would be met by any economies which might be ensured by a public authority. Amongst the possible ones it had been suggested during the inquiry that about £50,000 a year would be saved in (1) directors' fees; (2) salaries, &c.; (3) collection of rates; and (4) printing and stationary. With regard to possible saving in directors' fees the Commissioners thought that some compensation to the present directors would probably be thought necessary by Parliament, and it is not unlikely that this compensation would for some time absorb a great part of the suggested saving (£28,345 per annum).

It was suggested that £5000 per annum might be saved in salaries and superannuations, but the Commissioners thought it doubtful whether management of a business as large as that carried on at present by the eight companies, if done by an unpaid committee whose members would be frequently changed, was likely to result in economy. The permanent officials would have more responsibility, with the result that they would obtain higher pay. One of the witnesses who had experience in the municipal management of water undertakings (at Blackburn, Nottingham, and Burnley) considered that a larger staff, more office work, and more reporting were required under municipal than under a company's management. Under municipal management the Commissioners say that a motive to economise and the experience necessary to economise rightly are both wanting.

With regard to saving in the collection of rates one of the witnesses had estimated it at £10,000 a year. During the year 1897 the companies paid £51,884 for collecting, and it was suggested that a public authority might be able to employ the parish rate collectors in getting the water rates. This suggestion did not appear to be a practical one, for it was found that municipalities which managed their own water-supply found it necessary to employ a separate staff of collectors for the water rates and the borough rates. In the case of Liverpool the collection of the sanitary rate is made by the water rate collectors and the borough rate is collected separately; the water rate collectors receive 4 per cent. of the total money taken—a higher percentage than that which is paid by the London water companies. The difficulty of collecting water rates is increased by the fact that extra charges for baths, stables, gardens, &c., are made and that the trade supplies are given by meter and at special rates according to the quantity taken.

Another possible source of saving was that of Parliamentary expenses. This, the Commissioners observe, is purely hypothetical, for although it is true that the annual purchase bills of the London County Council would be saved if that Council were the purchaser the purchasing authority would have to make applications to Parliament for extending its powers in the same way that the companies at present have to make them. Moreover, the expenses of an arbitration leading up to a purchase would be very heavy.

It was suggested that a saving of £5000 a year in

stationary and printing might be made if the undertakings were bought from the companies. The Commissioners agreed with Sir John Lubbock that a public authority was likely to spend more rather than less on that item.

In the case of purchase of the undertakings by a public authority one of the most important changes which would take place has regard to the Chamberlain's Sinking Fund. The Sinking Fund clauses are, the Commissioners point out, peculiar to metropolitan water legislation. The first Sinking Fund clause was introduced into an Act of the East London Company in the year 1886 at the instance of the City of London. Three similar forms have been adopted in the case of other companies and now in some form the clause has been applied to all the companies. In detail there are differences in the form of the clause introduced, but the operation in each case is substantially the same and has the following effect: "Whenever a company obtains power to borrow money on debenture stock—and since 1886 no company has obtained power to increase its capital in any other way—the clause assumes that the money so borrowed earns profit at the average percentage of the dividend or interest paid on all the capital of the company, whether share capital or loan capital. The excess of that average percentage over the interest payable on the debenture stock issued *plus* 1 per cent. for management of such debenture stock is taken as the profit earned by the new capital and the company are required to pay the whole of the excess to the Chamberlain of the City of London as trustee for the purpose of purchasing and holding shares of the company and of investing the dividends thereon with a view to ultimately extinguishing the capital of the company or for such other purposes as Parliament may from time to time determine." This clause prevents any additional value accruing to the undertaking from the new loan capital and withdraws from the profits of the company the sum paid over to the Chamberlain for the benefit of possible purchasers in the future. Parliament required the City Chamberlain to re-invest payments which were made on account of the Sinking Fund and the dividends accruing from them in purchasing the shares of the company which made the payment. The transfers of the stock purchased are taken by the Chamberlain in his own name with the description, "Chamberlain of the City of London." The accounts of the Chamberlain's Sinking Fund have not at present been published with the other accounts of the Corporation, but in future they will be included with the notion that their responsibility will thereby be established.

The intention of the clauses, the Commissioners point out, was that fresh borrowing powers should be granted to the companies only on condition that the future profits assumed to result from the additional expenditure should be appropriated for the benefit of a purchaser representing the interest of the public.

Up to the present time the practical result of the clauses has been small, the dates when payments to the Chamberlain become due have not yet arrived, but there are, taking all the companies together, £6,320,000 of debentures subject to the Snkiing Fund clause. In the year 1887 the sum of £4804 was paid to the Chamberlain, and it is estimated that should the present dividends of the companies continue unaltered no less than £119,703 a year will be payable in and after the year 1915, and it may be safely asserted that the operation of the Sinking Fund clauses will provide a very substantial sum.

THE PRINCE OF WALES'S HOSPITAL FUND FOR LONDON: THE REPORT FOR 1899.

As we have already mentioned, the annual meeting of the General Council of the Prince of Wales's Hospital Fund for London was held on Feb. 13th at Marlborough House, the PRESIDENT (H.R.H. the Prince of Wales) being in the chair, and the draft report for the past year was read and adopted. The total receipts for the year 1899 showed an increase of about £9,000 over those of 1898, and the total sum distributed for the year was £42,000. At the close of the meeting H.R.H. the PRINCE of WALES said that it only remained for him to perform what might seem a formal duty, but one which in reality was one of pleasure—namely, most heartily and sincerely to express his thanks to the Council and honorary officers of the Fund. Proceeding the Prince of Wales felicitously congratulated Sir William Mac Cormac who, he said, was absent at the seat of war. "At his time of life," said His Royal Highness, "the performance of the arduous duties that this necessitates reflects, I think, the greatest credit on him and gives the utmost satisfaction to all who know him."

The report, which showed an eminently satisfactory state of matters, was as follows:—

The General Council view with satisfaction the work of the Fund during the past year, as shown by the reports of the several committees appended hereto. It will be seen that the general policy adopted at the inauguration of the undertaking has been continued, and while money has not been hoarded unnecessarily the total distributed has left a balance on the right side. The receipts for 1899 are £48,536 15s. 4d., as against £39,272 3s. 5d. of the previous year. This result the Council consider highly satisfactory under the peculiar circumstances of the year. This is more especially the case, seeing that in view of the exceptional claims upon the public the committee decided not to make the usual autumn appeal. It is, however, a noteworthy fact that of all the sums received not one has been in the form of a legacy, although the hospitals themselves derive a large proportion of their incomes from this source. But now that the Fund is proved to have come to stay it is hoped that exceptions to this rule may be introduced from outside the ranks of existing subscribers.

The total sum distributed for 1899 amounted to £42,000. Of this sum £26,250 has been given as annual grants and the balance as donations. It will be seen that in the majority of cases the grants have been given on certain conditions. The cost of management and collection is about 3¼ per cent., as compared with about 6¼ for 1898. As stated by His Royal Highness the President, improvement is evident from the fact that the receipts are larger and the expenses smaller. There has been no clashing with the work of either the Sunday or Saturday Funds, and the promise given to that effect has been kept. Subscribers may be interested to know that most of the surplus copies of the Jubilee programme printed for the benefit of the Fund have been given to London hospitals, board schools, workhouse infirmaries, and other institutions.

In the report of the Hospitals Distribution Committee it will be noted that a distinction is drawn in those cases in which grants are withheld between the ten institutions which, though favourably reported on, did not at the end of last year appear to be in urgent need of further help and the three which were not deemed to be hospitals in the true sense of the word. This distinction is drawn by the advice of the Visiting Committee and in accordance with requests frequently published in the public press. The effect of the work for the year is that, in addition to improvements in operating theatres or rooms, nurses' accommodation, sanitary and other requirements, 45 more disused beds will be re-opened and maintained, making a total of 287 re-opened in the last three years through the help of this Fund. Rather more still remain closed, but in many of these instances the beds could not easily be re-opened at the present time. In some hospitals the vacant wards are used for pay patients and thus fulfil a useful purpose, which makes it desirable to defer the consideration of re-opening these beds as free. In others they are used for nurses, and if they are devoted to their intended purposes fresh accommodation must be provided for nurses. In still harder cases the debts of the hospitals must be liquidated before any fresh liabilities are incurred. In the course of the present session a petition will be presented to Parliament by the Central Hospital Council calling attention to the heavy rating of hospitals. In support of this, on behalf of the Fund, a petition has been forwarded in accordance with the instructions of the Executive Committee, expressing the sympathy of all concerned and their desire to see the rating of all recognised London hospitals abolished. It may now be considered that the expenses of the Fund have been reduced to a minimum. Every care is taken that the money subscribed be wisely spent. Therefore, the General Council would earnestly request all interested in the cause to support the Fund in the present year, when the hospitals will be called upon to admit the wounded and when more than ever public charity is apt to turn from the sufferers at home to those abroad. Demands must shortly be made on the hospitals, not only for their increasing number of patients, but especially this year for soldiers and sailors returning from South Africa in need of good nursing and tender care. In conclusion, the Council confidently appeal to all their generous supporters, including the Press, to aid them in maintaining the established and successful position of the Fund.

THE BACTERIAL TREATMENT OF CRUDE SEWAGE.

IT is abundantly clear that before we are able to pronounce definitely upon the merits of the bacterial treatment of sewage the evidence of long practical experience must be at hand. Nothing would seem to be simpler than that sewage should be spread upon a large area of porous material and there left to liquefy and ultimately to be converted into inoffensive products by the agency of bacteria. But of course sewage is not a simple organic mixture. If it consisted solely of fæces, water, and urine, bacterial agencies would be equal to the task of purifying it to a remarkably high degree. The difficulty even with the chemical treatment of sewage has been owing to the presence of matters like paper, fat, fibre, factory refuse, &c.,

which are hard to disintegrate. The same substances present a serious obstacle to the completion of the work of purification by bacteria. In the coke beds at Crossness and Barking there occurs a deposit of them which decreases the sewage capacity of the coke bed. A series of gaugings of the capacity of the 13-foot coke bed, for example, showed that the decrease of capacity was proceeding at the rate of 1 per cent. of the original capacity per week. Dr. Clowes, the chief chemist to the London County Council, undertook experiments with a view of preventing or minimising this choking of the coke bed, for it threatened a short life to the filter. As might have been guessed the deposit upon the coke consisted largely of cellulose or chaff, straw, and woody fibre, all of which are materials which baffle any attempt at disintegration by bacteria and, further, which close the pores of the coke. Attempts were therefore made, and with some success, to separate this woody sediment by allowing the sewage to settle slightly in a wooden trough. The sediment so obtained was inoffensive and contained from 52 to 70 per cent. of combustible matter. By adopting this simple preliminary the rate of choking of the coke bed was reduced from about 1 per cent. per week of its original capacity to 0·64 per cent. It is hoped that further trials will show that even a higher success in this direction is attainable.

The bacteriology of the deposit which accumulates upon the coke beds is of interest. Dr. Houston remarks that the organic matter is probably of such a nature as to resist the action of bacteria for a very considerable time if not almost indefinitely. The number of bacteria found per gramme of deposit was 1,800,000. Even this large number of microbes does not account for the deposit, for Dr. Houston has found that this number of typhoid bacilli, for example, weighed only 0·0000147 gramme. The character of the microbes appearing in the cultures differed somewhat from those found in crude sewage. Thus there was an increase in the number of spores of bacillus enteritidis sporogenes and a decrease in the number of bacillus coli. Proteus-like germs were present in abundance as were also the bacillus arborescens and an allied form. The bacillus prodigiosus was also isolated. Inoculations of a guinea-pig with some of the deposit developed an abscess at the site of inoculation and later the same characteristic red-colour-forming bacillus was isolated from the pus of the abscess. Mice similarly inoculated died with the characteristic symptoms of tetanus and bacilli were noted which in form were indistinguishable from the tetanus bacillus. Further experiments left little room for doubt that the tubercle bacilli are present in important numbers, but apparently they have lost for the most part their infective power. Dr. Houston sums up the bacteriology of the deposit in three sentences. In crude sewage, he writes, in bacterial coke beds, and in the effluent from bacterial beds, there are certain bacteria which, after being stained with hot carbol-fuchsin resist decolourisation with 33 per cent. nitric acid. Some of these "acid-fast" bacteria cannot with certainty be morphologically distinguished from the tubercle bacillus. In one instance a guinea-pig inoculated with the deposit accumulating on the coke bed died and presented on examination the appearance of death from tubercle infection, and sections of its organs when appropriately stained showed the presence of numerous tubercle bacilli.

These interesting results appear in a report recently published by the London County Council and their significance turns on the question as to whether the effluent discharged into a stream is used for drinking purposes or not.

THE LEICESTER MEDICAL SOCIETY: CENTENARY DINNER.

THE centenary of the Leicester Medical Society was celebrated on Feb. 27th by a dinner in the County Assembly Rooms, Leicester, which was attended by members of the medical profession from all parts of the country. Dr. Frank M. Pope (President of the society) occupied the chair, and was supported by the Archdeacon of Leicester, the Mayor of Leicester, Sir William Broadbent, Sir J. Sawyer, Sir Felix Semon, Sir Thomas Wright, Dr. W. S. Church (President of the Royal College of Physicians of London), Dr. F. T. Roberts (President of the Medical Society of London), Dr. J. B. Spence (President of the Medico-Psychological Association), Mr. J. Tweedy (Vice-President of the Royal College of Surgeons of England), Mr. T. Bryant (President of the Royal Medical and Chirurgical Society), and Dr. Dawson Williams. Amongst those present were Dr. H. Michie (President of the Nottingham Medical Society), Mr. C. H. Hough (President of the Derby Medical Society), Dr. Howes (President of the Lincoln Medical Society), Mr. R. Taylor (chairman of the Leicester Provident Dispensary), the chief constable of Leicestershire, the town clerk of Leicester, and other local public gentlemen.

The CHAIRMAN, in giving the toast of "The Queen," referred to the Queen's visit that day to Netley. Such a journey must have been very fatiguing to one of Her Majesty's advanced years, but it was satisfactory to learn that she had been cheered on her way by the information received from the seat of war—information which had made them all cheerful. And if there was anything which would render that toast more acceptable at a gathering like the present it was that Her Majesty had always been mindful of her medical men and had on many occasions shown them her warm esteem.

The health of the Prince of Wales having been submitted from the chair and drunk with much enthusiasm, and

Mr. C. DOUGLAS having submitted "The Navy, Army, and the rest of Her Majesty's Forces," and the toast having been duly acknowledged,

Sir WILLIAM BROADBENT gave the toast of "The Leicester Medical Society." Dwelling on the value of such societies he said he thought there were no organisations such as this which did not serve a useful purpose. Meetings were held, papers were read, discussions were initiated, and opinions were exchanged, all of which tended to the benefit of the profession. A man could not read a paper before a medical society or venture on criticism without thinking the subject over and putting his own ideas in order, which was an exercise of great value not only to himself but to the other members of the society. At such meetings one found the young man fresh from lectures and hospital laboratories meeting the man of ripe experience. The man of ripe experience might from the young man realise the progress which had been made since his time, and the young man might find his theories shattered against the walls of ripe experience. In both instances a great service was rendered and marked progress was ensured. Another important work of medical societies was the bringing together of the members of the profession. By this means jealousies and suspicion were mitigated and honourable competition advanced. One of the great objects of such societies was to sweeten the moral atmosphere and to keep down quackery, which sometimes permeated into their ranks. There was another point for which they were indebted to these medical societies and that was that no one could attend their meetings without learning something of the advancement made in medical and surgical knowledge, and in that respect alone the work of such societies was of the greatest possible value. It was just 100 years since the Leicester Medical Society was started. He should have liked to have brought before them what had been done in regard to their profession in that period in London, but he had not the time at his disposal to do so. One of the things, however, which struck him in looking at some of the records of those days was that they had just had an epidemic of influenza, when the medical societies of London issued a circular with a number of questions on influenza. The questions could not be better put to-day and the answers were very instructive. He noticed that among the answers was a very interesting one from Leicester from a Mr. Butler. In replying to the question as to what were the symptoms he was one of the few who "reserved his opinion." Another question which exercised the public mind of that day was vaccination. He found that Manchester resolved to give the poor the benefit of vaccination and money was voted for gratuitous vaccination. He was perfectly aware that in saying this in Leicester he was treading on dangerous ground. He thought for the first time in his life he had that day made the acquaintance of an anti-vaccinationist, though he did not venture to discuss the question, as he was well aware that one might just as well try to discuss the beautiful sunset with a colour-blind man as vaccination with an anti-vaccinationist. But he thought that in the future the process would undergo development. They were vaccinating actively at the present moment

against typhoid fever, and he thought they would sooner or later see vaccination adopted for protection against most contagious diseases. Reverting to the toast Sir William Broadbent wished the Leicester Medical Society every success and resumed his seat amid applause.

The CHAIRMAN, in replying to the toast, said they appreciated Sir William Broadbent's kind and sympathetic speech. No one was better qualified to tell them what a medical society should be. Their society, as they knew, was just celebrating its centenary. It was established, he believed, mainly for the circulation of books. It met twice a year and held its meetings at what he presumed was the chief hotel of the time. The members ordered three books and then feasted. Unfortunately, little was known of those very early days of the society, but undoubtedly by the circulation of literature it supplied a great want. The society in those early days comprised amongst its members two eminent surgeons, Mr. Thomas Paget, senior, and Mr. Thomas Paget, junior. He was thankful to say that they had had good surgeons in Leicester ever since. He knew of no town where there was such a fraternal feeling among the members of the medical profession as at Leicester and he attributed that state of things very largely to the work of their society.

Mr. C. J. BOND proposed "The Royal College of Physicians and Surgeons and the Learned Medical Societies," and in the course of his remarks said that medical politics should only be directed to obtaining for the medical profession a better opportunity of doing their true work.

Dr. CHURCH, Mr. TWEEDY, Dr. ROBERTS, and Mr. BRYANT responded.

The MAYOR of LEICESTER, in responding to the health of the Mayor and Corporation, referred to the improved sanitary condition of the town and said that the corporation in their endeavour to make the town clean and healthy had succeeded in reducing the death-rate from 23 per 1000 to something between from 14 to 18 per 1000. In short, they had done their best to reduce the incomes of the medical profession. With regard to small-pox he believed that by adopting the system of isolation they had in Leicester succeeded in preventing the spread of that disease. He was glad to find other towns following their example. He and the Sanitary Committee would be glad at all times to coöperate with the medical profession in any way they possibly could.

Mr. G. C. FRANKLIN gave "Our Guests," and the Archdeacon of LEICESTER, Dr. WARD COUSINS, and Sir JAMES SAWYER responded. The toast of "The Chairman" concluded the proceedings.

THE APPOINTMENT OF EXTERN EXAMINERS IN THE ROYAL UNIVERSITY OF IRELAND.

A MEETING of the Senate of the Royal University of Ireland was held on Feb. 8th, when Dr. W. A. MCKEOWN brought forward the following motions:—

1. That extern examiners be appointed in the Faculties of Arts and Medicine, so far as the funds of the Royal University will allow.
2. That a committee be appointed to inquire as to the examinations in these faculties in which extern examiners are most required and as to the funds which are now or hereafter could be made available for the payment of such examiners.

In support of these suggestions Dr. W. A. McKeown has issued a most important statement in which he says that his chief reason for proposing these motions is that the examinations of the University are regarded generally by the public, by teachers, and by students, and even by members of the Senate, as unfair, mainly through the peculiar constitution of the examining boards, and that the appointment of extern examiners would certainly lessen that unfairness and do great good in other ways. To ascertain the grounds for this prevalent belief Dr. McKeown proceeds to investigate the relations of the Royal University with the students and with the colleges. He explains what an immense advantage the students from University College, Dublin, and the Catholic University School of Medicine have, as in one-half of every examination they are examined by their own teachers, whilst the students from other colleges are examined only in a small part by their own teachers. As a result he holds that the awards of prizes, &c., by the Royal University since its foundation have been vitiated and unreliable, the prizes obtained by students of these two schools having been obtained with odds greatly in their favour, whilst the prizes obtained by other students have been gained with the odds greatly against them. Dr. McKeown says that on the actual examinations doubtless the successful candidates were entitled to their prizes, &c., but under more equitable conditions other candidates might have been the fortunate winners, and other persons might have competed. As showing how, in his opinion, the constitution of the boards of examiners may affect the examination Dr. McKeown gives in his pamphlet the following table:—

Table showing the Subjects for the Final Examination for the Degrees of M.B., B.Ch., B.A.O., and the Institutions in which the Examiners Teach.

—	Belfast.	Cork.	Galway.	Catholic University School of Medicine.	Richmond Hospital.
1. Medicine, Theoretical	—	—	1	—	1
2. Medicine, Clinical	—	—	1	—	1
3. Medical Jurisprudence	—	1	—	1	—
4. Hygiene	—	1	—	1	—
5. Surgery, Theoretical	—	—	—	1	1
6. Surgery, Clinical ...	—	—	—	1	1
7. Surgery, Operative	—	—	—	1	1
8. Ophthalmology and Otology	—	1	—	1	—
9. Midwifery and Diseases of Women and Children ...	1	—	—	1	—
10. Pathology	1	—	—	1	—
—	2	3	2	8	5

This table shows the relative position of the students from the various schools to the examiners in the Final M.B. Examination, a position which is made still more evident, he thinks, by the following table:—

Table showing the Number of Persons from Various Medical Schools who have obtained the Degree of M.B., B.Ch., B.A.O., in the Years 1889, 1894, and 1899.

—	1889.	1894.	1899.	Total.
Queen's College, Belfast	32	21	27	80
Queen's College, Cork	15	8	11	34
Queen's College, Galway	2	—	1	3
Catholic University School of Medicine	6	5	10	21
School of Physic, Trinity College ...	5	1	—	6
College of Surgeons, Dublin	—	1	—	1
London School of Medicine for Women	—	1	—	1
Durham University	—	1	—	1
Mixed returns—i.e., where a student has been educated at more than one school	10	—	2	12
	70	38	51	159

Dr. McKeown says the number of Fellows and examiners approximately which should represent the different schools at the final medical examinations on the basis of graduation compared with what such schools really have is as follows:—

Belfast	with 80	graduates	shou'd have	11½	but has	2
Cork	,, 34	,,	,,	5	,,	5
Galway	,, 3	,,	,,	½	,,	2
Dublin—						
Catholic University School of Medicine	,, 21	,,	,,	3	,,	8
Richmond Hospital	,, —	,,	,,	—	,,	5

Dr. McKeown points out that the position of the Richmond Hospital in relation to the Royal University requires explanation, and says that the constitution of the boards of examiners is unfair to all the schools and colleges except to

University College, Dublin, and the Catholic University School of Medicine, both of which have a predominant influence in all the examinations of the University.

Dr. McKeown brought his two motions before the members of the Senate on Feb. 8th at their meeting, when after a discussion a committee was appointed to examine the financial state of the University with the view of ascertaining how far it would be possible and desirable to appoint additional and extern examiners. Subsequently all the old Fellows and examiners in the Faculty of Medicine were re-appointed, with the addition of Professor Lindsay (Belfast) in medicine and Professor W. N. Thompson (Belfast) in physiology.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 7084 births and 5387 deaths were registered during the week ending Feb. 24th. The annual rate of mortality in these towns, which had increased from 21·2 to 25·8 per 1000 in the three preceding weeks, declined again to 24·2 last week. In London the rate was 21·5 per 1000, while it averaged 25·9 in the 32 provincial towns. The lowest death-rates in these towns were 9·9 in Croydon, 13·7 in Cardiff, 16·9 in Birkenhead, and 17·6 in West Ham; the highest rates were 37·3 in Blackburn, 39·0 in Salford, 40·7 in Wolverhampton, and 44·7 in Preston. The 5387 deaths in these towns included 444 which were referred to the principal zymotic diseases, against numbers increasing from 428 to 469 in the three preceding weeks; of these 120 resulted from whooping-cough, 115 from measles, 92 from diphtheria, 47 from "fever" (principally enteric), 40 from diarrhœa, and 30 from scarlet fever. No fatal case of any of these diseases occurred last week in Brighton; in the other towns they caused the lowest death-rates in Swansea, Birkenhead, Halifax, and Gateshead, and the highest rates in Wolverhampton, Blackburn, Preston, and Sheffield. The greatest mortality from measles occurred in Wolverhampton, Leicester, Preston, and Sunderland; from whooping-cough in Portsmouth, Norwich, Salford, and Leeds; and from "fever" in Wolverhampton. The mortality from scarlet fever showed no marked excess in any of the large towns. The 92 deaths from diphtheria included 48 in London, 10 in Sheffield, six in Liverpool, and four in Portsmouth. No fatal case of small-pox was registered last week in any of the 33 large towns, but 11 small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, Feb. 24th, and three new cases were admitted during the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 2009, against numbers decreasing from 3578 to 2052 on the 14 preceding Saturdays; 160 new cases were admitted during the week, against 174, 157, and 159 in the three preceding weeks. Influenza was certified as the primary cause of 52 deaths in London. The deaths referred to diseases of the respiratory organs in London, which had been 423 and 527 in the two preceding weeks, declined again last week to 485, and were 62 below the corrected average. The causes of 67, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Leeds, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Manchester, Blackburn, Halifax, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had risen from 23·0 to 31·0 per 1000 in the six preceding weeks, further increased to 31·7 during the week ending Feb. 24th, and exceeded by 7·5 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·2 in Leith and 24·7 in Aberdeen to 39·1 in Dundee and 62·4 in Perth. The 981 deaths in these towns included 19 which were referred to diarrhœa, 17 to measles, 17 to whooping-cough, nine to scarlet fever, five to diphtheria, and two to "fever." In all 69 deaths resulted from these principal zymotic diseases, against 61 and 82 in the two preceding weeks. These 69 deaths were equal to an annual rate of 2·3 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had increased from eight to 20 in the three preceding weeks, declined again to 19 last week, and included eight in Glasgow, four in Aberdeen, and three in Edinburgh. The deaths from measles, which had been 19 and 24 in the two preceding weeks, declined again last week to 17, of which nine occurred in Glasgow, five in Dundee, and three in Paisley. The fatal cases of whooping-cough, which had risen from eight to 18 in the five preceding weeks, decreased again to 17 last week, and included nine in Glasgow, three in Aberdeen, and three in Perth. The deaths referred to scarlet fever, which had been three and 11 in the two preceding weeks, declined again last week to nine, of which five were registered in Glasgow, two in Edinburgh, and two in Paisley. The fatal cases of diphtheria, which had been seven in the preceding week, decreased to five last week and were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 172 to 325 in the four preceding weeks, further rose to 362 last week, and were 129 above the number in the corresponding period of last year. The causes of 42, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7 and 42·4 per 1000 in the two preceding weeks, further rose to 51·0 during the week ending Feb. 24th. During the past four weeks the death-rate in the city has averaged 36·7 per 1000, the rate during the same period being 21·1 in London and 26·7 in Edinburgh. The 342 deaths registered in Dublin during the week under notice were 58 in excess of the number in the preceding week, and included 11 which were referred to the principal zymotic diseases against 17 and 15 in the two preceding weeks; of these five resulted from measles, four from diarrhœa, one from scarlet fever, one from "fever," and not one either from small-pox, diphtheria, or whooping-cough. These 11 deaths were equal to an annual rate of 1·6 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·2 in Edinburgh. The deaths referred to measles, which had declined from 18 to one in the six preceding weeks, rose again last week to five. The fatal cases of diarrhœa, which had been two in each of the three preceding weeks, increased to four last week. The mortality from scarlet fever corresponded with that in the preceding week, while that from "fever" showed a decline. The 342 deaths in Dublin last week included 51 of infants under one year of age and 121 of persons aged upwards of 60 years; the deaths of infants and elderly persons being respectively 11 and 40 in excess of the numbers in the preceding week. Eight inquest cases and four deaths from violence were registered, and 182, or more than one-half, of the deaths occurred in public institutions. The causes of 11, or more than 3 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE under-mentioned Surgeons have been promoted to the rank of Staff Surgeon in Her Majesty's Fleet:—Johnston Hamilton Acheson, John McElwee, D'Arcy Harvey, Reginald Thomas Alexander Levinge, John Christopher Ferguson, and Edward Pain Mourilyan.

The following appointments are notified:—Surgeons: J. P. H. Greenhalgh, lent to Royal Marine Infirmary; J. F. M. McDougall to the *Rodney;* and N. J. Roche to the *Alexandra.*

IMPERIAL YEOMANRY.

The appointments of the undermenioned gentlemen as Medical Officers, with the temporary rank of Captain, are cancelled:—H. Manders, M.D. (Major, 1st Volunteer Battalion Princess Charlotte of Wales's, Royal Berkshire Regiment); R. C. Dun, M.B.; C. Smith, M.D.; A. C. Fry, M.R.C.S.; E. T. Vint, M.B.; C. B. Howse, M.R.C.S.; and H. A. Lownds (Captain, 2nd Volunteer Battalion the York and Lancaster Regiment). Francis Wellford, M.B. to be Medical Officer, with the temporary rank of Captain.

ROYAL ARMY MEDICAL CORPS.

Major M. T. Yarr has arrived at Portsmouth for duty. Brigade-Surgeon S. K. Ray, A.M.S., retired pay, has arrived in the Eastern District for duty. Major John Semple retires from the service receiving a gratuity. Lieutenant Douglas has left for South Africa.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant-Colonel C. B. Stoney, having resigned his Militia appointment, ceases to belong to the Army Medical Reserve of Officers.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the retirement from the service of the undermentioned officers: Lieutenant-Colonel William Flood Murray, Bengal Establishment. Lieutenant-Colonel Andrew Duncan, Bengal Establishment. Lieutenant-Colonel Edward Fawcett, Madras Establishment.

VOLUNTEER CORPS.

Artillery: 6th Lancashire: William Thomas Blackledge to be Surgeon-Lieutenant. *Royal Engineers:* 2nd Cheshire (Railway): Surgeon-Captain T. C. Bailey resigns his commission. *Rifle:* 2nd Volunteer Battalion the Queen's (Royal West Surrey Regiment): Surgeon-Lieutenant P. D. Minchin to be Surgeon-Captain. 3rd Volunteer Battalion the Northumberland Fusiliers: Surgeon-Lieutenant W. H. Vickery to be Surgeon-Captain. 1st Volunteer Battalion the Essex Regiment: Surgeon-Lieutenant A. B. Harris resigns his commission. 2nd Volunteer Battalion the Queen's Own (Royal West Kent Regiment): George Robert Fabris Stilwell, M.B., to be Surgeon-Lieutenant. 3rd (Sunderland) Volunteer Battalion the Durham Light Infantry: Surgeon-Lieutenant J. C. Fenwick to be Surgeon-Captain.

TRANSVAAL WAR NOTES.

The Chelsea Hospital for Women offers special facilities for the gratuitous treatment of the wives of reservists suffering from diseases which come within its province.

The x ray apparatus, the gift of the Duke of Newcastle to the *Princess of Wales* hospital ship, has proved of great service in locating the position of bullets in the wounded. The apparatus was supplied by Harry W. Cox, Limited, of Cursitor-street, W.C. The x ray apparatus on board the *Spartan* and *Trojan* were also supplied by this firm.

Captain G. S. Walker, R.A.M.C., died from enteric fever at Ladysmith on Feb. 23rd.

Captain Holt, R.A.M.C., died from wounds received during Sir R. Buller's operations at Modder river on Feb. 21st.

Lieutenant Mackenzie, R.A.M.C., was wounded in the Koodoosberg reconnaissance on Feb. 7th.

At a meeting held in Birmingham on Feb. 26th, a committee was formed to assist the general committee of the Royal Army Medical Corps Fund in London. Mrs. Bennett May and Mrs. Lloyd Owen were appointed hon. secretaries.

Major G. E. Hale, R.A.M.C., D.S.O., has been appointed by the War Office military commandant of the bearer company in connexion with the Imperial Yeomanry Hospital.

The medical staff of the Princess Christian Hospital left Waterloo on Feb. 28th for Southampton, where they embark on the *Assaye* for South Africa. The following is a complete list of the medical staff:—Major H. B. Mathias, D.S.O., R.A.M.C., the War Office representative, in command; chief surgeon: Mr. J. Paul Bush; medical officers: Dr. G. V. Worthington, Dr. E. A. Nathan, and Mr. A. T. Flemming; dressers: Mr. A. B. Cridland and Mr. E. M. Pearse.

The general committee of the Sick and Wounded Officers' Surgical and Medical Aid Fund, of which the Duke of Abercorn is president, have made arrangements whereby the best professional advice will be at the service of officers returning invalided from South Africa. Leading physicians and surgeons have placed their services at the disposal of the committee, and numerous offers of hospitality to invalids and convalescents have been received. Considerable funds will be required to meet the expenses involved in skilled nursing or special treatment over long periods and of costly surgical appliances. Subscriptions should be sent to the honorary treasurer, Hampden House, Green-street, W.

The following surgeons have been appointed to serve with the Welsh Hospital for South Africa:—Professor Thomas Jones, F.R.C.S.Eng., Professor of Surgery, Owens College, Manchester, and surgeon to the Manchester Royal Infirmary; Mr. J. Lynn Thomas, F.R.C.S. Eng., assistant surgeon to the Cardiff Infirmary; and Mr. R. H. Mills-Roberts, F.R.C.S. Edin., surgeon to the Llanberis Quarries Hospital. Alderman Sir David Evans has consented to act as treasurer to the hospital. Meetings are being held and local collections are being made in different parts of Wales and in the large provincial towns to press the claims of the hospital among Welshmen. The committee desire that it should be known that the hospital is intended for the use of the Imperial troops, irrespectively of nationality. A Welsh national concert is to be given in aid of the funds at the Queen's Hall, London, on March 14th at which Mr. Ben Davies has kindly promised to sing.

SIR J. SIVEWRIGHT'S AMBULANCE CORPS.

Mr. Allan Johnson, one of the three British members of the South African Medical Corps organised by Sir James Sivewright for ambulance service with the Boers, sends to the *Times* a full account of the remarkable adventures of that expedition. Although the Transvaal Government had wired to Cape Town "politely but firmly" declining their services they were induced to proceed to Delagoa Bay, where they had an interview with Mr. Pott, the Transvaal Consul, who told them curtly that they were not wanted, declaring that there were no wounded to require their care. Mr. Pott's object appears, however, to have been only to get rid of the British element in the corps. The Afrikander members, who had remained discreetly in the background so long as the corps had to deal with the British colonial authorities at the Cape or at Durban, now claimed complete control over the expedition, and, in spite of the official refusal of the Transvaal Government to have anything to do with the corps, they had no hesitation in accepting the friendly assurances of a Boer whom they met "fortuitously" at Lorenzo Marques that their services, if volunteered not collectively but individually, would be accepted. The British members naturally regarded these strange developments with suspicion, and, believing them to be at variance with Sir James Sivewright's intentions, as they undoubtedly were at variance with the conditions under which the expedition had been organised, Dr. Gray, the leader of the British section, sought to retain the equipment of the expedition until Sir James Sivewright's wishes had been elicited. Sir James, however, telegraphed that they were to be handed over to the Afrikander leader, Dr. Neethling, who proceeded with the other Afrikanders under special passports to Pretoria. Mr. Johnson says, in conclusion, it was clear "that while the Transvaal Government were quite willing to receive any number of Afrikanders into their service they would not look at an ambulance corps which included Britishers, especially if these showed that they meant to stick tenaciously to their pledge to work for the wounded of every sort and race without prejudice in the interest of humanity alone."

ARMY MEDICAL SCHOOL, NETLEY.

The eightieth session of the Army Medical School at Netley commenced to-day, Friday, March 2nd. 35 surgeons on probation (18 for the Indian Medical Service and 17 for the Royal Army Medical Corps) will attend the session. The following are correct lists of the surgeons on probation. It is believed that a large number of probationers are to be nominated for the Royal Army Medical Corps:—

SURGEONS ON PROBATION, R.A.M.C. NAMES IN ORDER OF MERIT.	
T. Biggam.	W. J. P. Adye-Curran.
H. Richardson.	J. Powell.
C. H. Carr.	R. L. Argles.
W. L. Baker.	J. G. Foster.
F. W. Cotton.	F. P. Lauder.
E. Bennett.	E. G. Ford.
F. M. Parry.	F. S. Walker.
B. R. Dinnis.	L. M. Purser.
J. S. Twigg.	

SURGEONS ON PROBATION, I.M.S. NAMES IN ORDER OF MERIT.	
J. D. Graham.	J. C. S. Oxley.
C. A. Sprawson.	H. R. Macnee.
W. H. Cazaly.	W. Lapsley.
W. V. Coppinger.	W. D. A. Keys.
P. A. Browne.	A. Chalmers.
A. Spitteler.	J. Good.
M. MacKelvie.	W. M. Houston.
L. J. M. Deas.	G. J. G. Young.
W. G. Hamilton.	S. R. Godkin.

The following district order has been issued at Aldershot: "As the welfare of the patients in hospital is in a great measure dependent on the class of men detailed for duty as orderlies thereto, the general commanding desires that the greatest discrimination should be exercised in the selection of these men and only those of good character and who can read and write are to be employed on this important duty."

THE LEGION OF HONOUR.

We recently mentioned the names of several French

medical officers who were made members of the Legion of Honour in recognition of their gallant services and we now have the pleasure of recording yet another addition to the distinguished roll. By a presidential decree dated Dec. 24th, 1899, Dr. Nestor Léonce Parin, medical officer of the second class in the Navy, was promoted to the grade of Chevalier of the Legion of Honour, the feat for which he obtained the reward being thus described: "At Tonkin, on Nov. 29th, 1896, during the action of Pinh-Nan-Taï, Dr. Parin went forward under a brisk fire in order to dress the wounds of four soldiers." The same gazette also records the advancement to the grade of Officer of M. Nicolas Chalmé, apothecary in chief to the Navy, with over 34 years' service, inclusive of five years and seven months afloat. The new officer's knighthood dates from June, 1886.

Correspondence.

"Audi alteram partem."

CLUB METHODS.

To the Editors of THE LANCET.

SIRS,—Possibly the following experience of club methods with their medical officers may be of sufficient interest to warrant its publication. I should first explain that the Hand-in-Hand Benefit Society is a small local society which pays its surgeons twice a year for work done in the same way practically as the more widely-known National Deposit Society—namely, for visit and medicine 2*s.* 6*d.*; consultation and medicine 1*s.* 6*d.*; repetition of medicine, 1*s.* After I took over this practice five years ago I was surprised to find my payment at Christmas replaced to the extent of 5*s.* by a receipt for an honorary member's subscription, and with this a note from the secretary addressing me as "Dear Brother" and simply asking for a receipt. There was never at any time any request that I should become an honorary member.

For the first few years I made no objection, but once when the payment for the half-year amounted to 7*s.* 6*d.* I declined having this honour thrust upon me. At the end of last year a payment of £1 1*s.* was due to me and there came back a cheque for 16*s.* and the usual receipt. I returned the receipt and explained that I had no desire to become an honorary member and pointed out that there was nothing in their rules making such a step necessary. I received a reply saying that such a course was customary, but on my insisting the payment was completed. Some days afterwards I received a letter, a copy of which is appended hereto as Enclosure A. My reply to this letter is also appended as Enclosure B. I do not think that any further comment is necessary.

I am, Sirs, yours faithfully,
C. SCOTT WATSON.

Parkside, Wonersh, Guildford, Feb. 24th, 1900.

[ENCLOSURE A.]

Hand-in-Hand Benefit Society,
17, Friary-street, Guildford,
Feb. 14th, 1900.

DEAR SIR,—Your letters of Jan. 25th and Feb. 1st were duly laid before the committee of the above society on Tuesday last and I am instructed by them to inform you that owing to your refusal to pay honorary subscription of 5*s.* your name is to be taken off the list of the societies' surgeons from this date. Therefore, if you have any account against the society from December, 1899, to Feb. 14th, 1900, I shall be glad to receive same. Yours truly,

Dr. Scott Watson. J. FOSTER, Secretary.

P.S.—I may add that the agent of your district has been informed that your name is taken off the surgeons' list for the Wonersh district and another medical gentleman appointed.—J. F.

[ENCLOSURE B.]

Parkside, Wonersh, Guildford, Feb. 17th, 1900.

SIR,—I am in receipt of the letter from your committee dated Feb. 14th. Of course, it is a matter of very little importance to me whether my name is taken off the list of the society's surgeons, but the whole proceeding is so extraordinary that I desire to make the following remarks on it to your committee.

In the first place, there is no *rule* that a medical officer shall become an honorary member, and it is distinctly wanting in ordinary courtesy to dock his Christmas payment of the subscription without even asking his permission. Secondly, the subscription is not a large sum, but it is 5 per cent. on a yearly payment of £5, an amount which I certainly did not receive from the society last year and have, I think, very rarely received during the five years I have been here. Third, the members whom I have here are people who, if not in the Hand-in-Hand, would cheerfully pay my ordinary lower fees of 2*s.* 6*d.* or 3*s.* 6*d.* per visit and from 2*s.* to 2*s.* 6*d.* for consultation and medicine at my own house. I have taken the trouble to go over several half-years taken at random. In one—the first half of 1897—I find that the patients I attended for you for £4 7*s.* would have paid me as private patients £6 0*s.* 6*d.* and equally without any bad debts. In another half-year 21*s.* for 28*s.*; in another £2 9*s.* for £3 7*s.* 6*d.*, and so on.

I want to show that your medical officers, if they are situated as I am, are doing you a distinct and substantial favour by attending your members at the fees you pay. For the privilege of doing you this favour you charge them 5*s.* a year, and not only so but you stop this sum out of their payment for work done without even a "by your leave," and if they object you take their names off the list of the society's surgeons. This procedure is so curious that I propose to send an account of it to THE LANCET. I am, Sirs, yours truly,

Mr. J. Foster, C. SCOTT WATSON.
Secretary, Hand-in-Hand Benefit Society, Guildford.

"PRODROMAL RASHES IN MEASLES."

To the Editors of THE LANCET.

SIRS,—The writer of the interesting annotation on prodromal rashes in measles in THE LANCET of Feb. 24th is not quite accurate when he states that the question of these rashes does not appear to be even entertained in English works. He will find that attention is drawn to the subject both in Dr. J. W. Moore's "Eruptive and Continued Fevers" (p. 138) and in the "Manual of Infectious Diseases" by Dr. Washbourn and myself (pp. 96 and 167). Dr. Dawson Williams also alludes to it in his article on Measles in Dr. Clifford Allbutt's "System of Medicine"—vol. ii., p. 111. In these books it is particularly stated that these rashes may lead to errors in diagnosis, and especially to mistaking measles for scarlet fever. Secondly, Trousseau, before Henoch appears to have been well aware of these eruptions, as may be seen by referring to his "Clinical Medicine," vol. ii., p. 214, of the New Sydenham Society's Translations, where in mentioning the date of appearance of the specific rash of measles he says: "I perceive, gentlemen, that I am causing you to take up an erroneous impression; I already hear some of you reminding me that I have several times shown you in our nursery wards infants in whom at the second day of the fever of measles small efflorescences were visible in situations where the skin was hot and covered with perspiration. On the next day, or the day after the next, there was scarcely a trace of these efflorescences to be found."

I am, Sirs, yours faithfully,
Homerton, Feb. 27th, 1900. E. W. GOODALL.

DESTRUCTION OF SUPERFLUOUS HAIR BY THE ROENTGEN RAYS.

To the Editors of THE LANCET.

SIRS,—Referring to some remarks I made at the meeting of the Thames Valley Branch of the British Medical Association at Kingston-on-Thames on Nov. 15th, on the beneficial therapeutic effects of the Roentgen rays on certain eruptions of the skin, I can now say that those cases are all doing well. In that of a woman, aged 33 years, who consulted me on Oct. 13th for a growth on each side of the chin of about 30 dark hairs about from half to three-quarters of an inch long, I administered seven exposures of the x rays, with the result that she had slight dermatitis, which got well in about a fortnight. All the hairs have disappeared and show no signs of return. I also had opportunities of seeing a case from the London Skin Hospital, Fitzroy-square, of a young girl, aged 23 years, with numerous dark hairs, which had grown freely on both sides of the face, after 18 exposures, had slight dermatitis and in a month after the last exposure the hairs had completely disappeared. Much care has to be exercised in the length of time of exposure and the number of exposures and regulation of ampère metres in the treatment of these cases.

Two other ladies since, one 25 and one 27 years of age, have had six and seven exposures successively and the skin shows slight electrical dermatitis, with the same successful results. The roots and sheath, when examined microscopically, show a drying up of the hair bulb and root sheath. The exposures in all these instances are less than noted by Dr. Neville Wood in his interesting article on a case reported by him in THE LANCET of Jan. 27th. I opine that we are in a position to say that we now have a very useful method of treatment in these hitherto troublesome growths of hair and an improvement on the tedious method of destruction by electrolysis.

I am, Sirs, yours faithfully,
Jan. 30th, 1900. JAMES STARTIN.

THE ORGANISATION OF THE PROFESSION.

GREAT YARMOUTH.—BENEFICIAL EFFECTS OF THE MEDICAL LOCK-OUT.—EVERY PRACTITIONER IN UNION.—WELCOMING AND HELPING THE JUNIORS.

(FROM OUR SPECIAL COMMISSIONER.)

(*Continued from page 577.*)

WITH regard to the medical officer of the lodge of female Foresters who had been persuaded by the medical union to withhold his resignation for three months pending negotiations a favourable settlement was obtained, though unfortunately it did not last long. At the end of the three months the female Foresters' lodge accepted the terms brought forward by the medical profession and appointed a medical officer on these conditions. But in the course of time this medical officer did not care to continue the work even on the higher and better terms. He found that the women were always ill, or imagined that they were ill, and gave him far too much trouble. In the interval there had been angry controversies between the women and the men Foresters. The latter had engaged in a struggle on behalf of the women and the women had been the first to desert them. Now, the better to fight the medical profession the men's societies had amalgamated with other similar friendly societies and had opened the Great Yarmouth Amalgamated Friendly Societies' Medical Institute, where they employed a salaried surgeon to do all their work. This was an opportunity for the women to return into the fold by joining the institute. Their medical officer, it was urged, wished to resign, what better could they do? And accordingly they joined the institute just opened by the friendly societies.

The Yarmouth branch of the Incorporated Medical Practitioners' Association had also to consider the position of the medical men who were employed by the London and Manchester and other insurance companies. These companies sent out paid canvassers who touted and practically advertised their medical officers. To serve such companies was incompatible with the principles advocated by the medical union, but nevertheless it was necessary to proceed with caution and slowly. It is no use to urge medical men to give up a portion of their income unless there is a well-disciplined and strong organisation to support them. Besides, it was well known that these companies would import strangers. Therefore the resignations were sent in gradually. This, however, did not prevent the insurance companies from importing outside medical men, but by the time they came the union had grown in strength and fixity of purpose, so that the newcomers were boycotted. The medical union also appointed a committee to watch the Midwives Bill. At first they were inclined to oppose the Bill and wrote to that effect to the Members who represent Yarmouth in the House of Commons. The Liberal Member promised to support the arguments of the members of the profession and the Conservative Member fenced with the question. The medical men themselves, however, did not at first know much about this subject. The committee whom they had appointed to study the details thought that it would not be prudent to oppose the Bill in its present stage. This was in 1897. The report of the committee concluded in favour of allowing midwives to attend cases of natural labour where there was no danger and no need to use instruments. They urged that midwives should not be permitted to give certificates of still-birth, and that those midwives who claimed to be placed on the register on the ground of previous experience should first be made to give satisfactory evidence of their proficiency. It was also thought that the penalties ought to be increased from a possible fine of £5 to £20. Both the Members of Parliament now expressed their readiness to support amendments in favour of these suggestions. The medical union also agreed to depute their executive to wait on the licensing bodies and on the General Medical Council so as to explain the various grievances which they were attempting to reform.

By the end of 1896 the friendly societies had accepted the proposal to amalgamate, but in practice they did not join simultaneously. The different societies came in one by one as their terms of agreement with their respective medical officers came to an end. They rented a large house, which had formerly been occupied by a well-known medical practitioner. The upper part was used as a residence for their senior medical officer, and the lower part was converted into a surgery, a dispensary, an office, and a waiting-room, &c. By the time all the benefit societies had joined them they had to employ a junior or assistant medical officer. The medical practitioners of Yarmouth at once decided not to meet these medical officers of the Friendly Societies' Medical Institute in consultation. Consequently the institute sent up to Norwich for consultants, but the Yarmouth Medical Union appealed to their Norwich colleagues and sent a deputation to explain matters. To the honour of the members of the profession practising at Norwich it should be noted that they warmly responded and unanimously refused to act as consultants for the Yarmouth Friendly Societies' Medical Institute. The resolution to boycott the medical officers of the institute was adopted on Jan. 29th, 1897, and as a consequence some of the patients had to be sent to London. Unfortunately the metropolis is so immense that the work of organising the profession in London progresses but slowly, otherwise the consultants of the capital would have acted like those of Norwich.

In seeking to organise the profession at Yarmouth great care has been taken to encourage and welcome young practitioners and new-comers. The recently qualified practitioner must begin to work somewhere, and if organisation means only the creation of monopolies for the older and established practitioners the movement will certainly break down. To encourage such selfishness would weaken—indeed, it would completely wreck—the cause. By encouraging younger men and impecunious beginners they soon become loyal and devoted members of the medical union. Otherwise they will be compelled to act as outsiders. The great desire has been to give the struggling practitioner honourable appointments and patients. By keeping the interests of the poorer members of the profession constantly in view and being ever mindful that juniors as well as seniors have to live, much has been done to create a real feeling of brotherhood and genuine devotion to the cause of medical union. Formerly a great amount of work was done by unqualified medical assistants who attended to midwifery cases, &c., but to-day there is not a single unqualified assistant in Yarmouth, and those medical practitioners who employ dispensing chemists keep them strictly to the work of dispensing. While the Yarmouth branch of the Incorporated Medical Practitioners' Association thus deals actively with all ethical and economical questions, there is for the reading and discussion of purely scientific papers the Yarmouth Clinical Society which is open to all. Then for convivial purposes there is the old Medico-Social Society and thus each organisation has its special and distinct purpose and no clashing can occur.

The question of establishing yet a fourth organisation was raised and debated for some time. It was proposed to follow the example of the practitioners of Eastbourne and Coventry and to establish a medical service and a scheme to that effect was prepared. But it became very evident that the medical practitioners objected to contract work in any form, and therefore, they asked, why should they themselves organise such work? In some places and under the stress of special circumstances it might be necessary to do so, but it was felt that no such stress existed at Yarmouth. While the Yarmouth practitioners remain in their present frame of mind it seems quite evident that nothing of the sort will be attempted. But circumstances may alter and strong outside pressure may be brought to bear. For instance, if a great many members were to secede from the Friendly Societies' Medical Institute some form of medical aid would have to be provided for them. These members would not be taken back on the old terms and many of the senior practitioners would not care to take them back on any terms. Indeed, this is a growing sentiment of which the friendly societies would do well to take into account before they push matters too far. A medical practitioner who has several clubs, at first, and very naturally, hesitates to give them up. But when he has once done so, and in the course of time discovers that he can get along just as well without them, nothing will induce him to revert to this form of practice. It is far too irksome and insufficiently remunerative. If a medical service was organised by the profession it is probable that only the junior practitioners would consent to act as its medical officers. The

establishment of a medical service at Yarmouth would therefore prove very advantageous to the younger practitioners. The members of such a service would have a larger choice of medical men but they would not get the senior practitioners. On the other hand, even the junior practitioners are now so well satisfied with their position that they are not at all keen on the subject. Therefore the project of a medical service is in abeyance: the scheme is ready to be brought out should the necessity arise.

Among the other questions discussed was that of the stamping out of all forms of canvassing. On this the medical union felt strongly and acted with energy. Strict measures were taken to prevent canvassers making use of the names of any medical man. Undeterred by this the National Deposit Friendly Society sent an agent to Yarmouth and endeavoured to establish a branch in that town. This society pays its medical officers according to a tariff that is much higher than usual in such business; but, on the other hand, it recruits a much higher class of members. Of course, they have no wage limit, and therefore the members of the Yarmouth Branch of the Incorporated Medical Practioners' Association all refused the positions that were offered to them. After several vain efforts the society had to abandon the attempt and withdrew its agent from the town. Here, then, was a distinct victory and much future trouble and loss were avoided by making, at the onset, a determined and united resistance. Unfortunately there is generally an exception to the best of rules. Though the members of the profession at Yarmouth are wonderfully united and unanimous there was one medical man who stood out against them. It has always been a matter of great difficulty to know what to do in such cases. To refuse to meet in consultation such a person is about all that can be done, but in this case there was another weapon available. The practitioner in question happened to hold a public appointment, and according to the regulations he was bound to have a deputy. Naturally all the members of the medical union refused to act in this capacity. He thereupon appealed to the medical officers of the Friendly Societies' Medical Institute and offered to become their consultant if one of their two medical officers would act as his deputy. This proposal was accepted and his difficulty seemed to be at an end; but fortunately for the cause of the medical union a difference took place and the medical officers of the institute refused to act as deputy for the Poor-law medical officer, so that the latter had to appeal once more to the members of the medical union. One of the members of the medical union then consented to act as his deputy on his promising to cease his opposition to the medical union. He has already given up the clubs which employed canvassers, and it is probable that at its next meeting he will be elected a member of the Yarmouth branch of the Incorporated Medical Practitioners' Association. This medical union will then possess 17 members, who comprise all the medical men of the town who are in active practice. The two medical officers of the Friendly Societies' Medical Institute are thus absolutely isolated. Those who want to contract for medical aid must either accept the terms laid down by the members of the medical profession or join the Friendly Societies' Medical Institute. In 1898 a young medical practitioner established himself at Yarmouth. No sooner had he arrived than the secretary of the medical union called upon him and persuaded him to join. Soon afterwards he was offered the post of medical officer to a club. The position offered was such that he would have readily accepted it, but he thought that it was his duty first to consult the other members of the profession, and they had no difficulty in explaining to him that he should refuse the appointment. This he did, and now that he is better acquainted with all the circumstances he fully realises that the advice given him was to his own advantage as well as to the advantage of the profession as a whole. Indeed, it is very useful for young men who have not yet acquired experience in these matters, to find, on establishing themselves, that there is a strong union, composed of the most experienced men, ready to give them the best advice and all possible help and support. When thus taken in hand early these new-comers become very faithful and useful members of medical organisations.

In the commencement of the year 1899 it was found that the work of organisation had been so thoroughly done that it was no longer necessary to hold monthly meetings. It sufficed that the executive should meet once a month and the district committee should meet every three months. The question of hospital abuse was now taken in hand. All the members of the hospital staff are also members of the medical union. The ticket system prevails and there are about 4000 tickets distributed in the course of the year giving the bearer a right to six weeks' treatment. Undoubtedly this leads to some abuse among the out-patients, though notices are posted on the wall and warnings issued that the hospital is a charity and only meant for the poor. The hospital medical staff have now made arrangements that except in urgent cases they will not take more than 50 new patients in any one day. This gives 12 new patients to each member of the staff and as the number is thus limited they receive fuller attention. By having more time to devote to new patients there is a better chance of discovering cases of abuse and these are reported to the committee of management. Some improvement has been effected, but the present state of affairs is still considered unsatisfactory.

To return to the question of club practice it may be noted that according to the annual report dated Dec. 31st, 1897, there were at that time 27 branches of various registered friendly societies at Yarmouth. These possessed 4534 male adult members, 1129 juveniles or boys under 18 years, and 349 wives and daughters of members. The children under six years numbered 481. This gave a grand total of membership of 6493. The increase during the next 12 months amounted to only 327 more members, which is but a small amount considering not only the natural increase of the population but the fact that the friendly societies freely accepted as members both women and children. Indeed, the increase of adult male members in 1898 only amounted to 45. But many labourers have come to the town since who wish to belong to some medical aid organisation and who know nothing of the disputes. The chief objection made by the members of the friendly societies is not to the payments which the members of the medical profession demand, but to the wage limit and the exclusion of women and children. The adults, whether men or women, pay 4*s.* a year, the juveniles 2*s.* 6*d.*, and there is a sliding scale for children under six years of age. If a young man joins as an adult member when he is 18 years of age the probabilities are that he will give his medical attendant but little trouble for many years, but if a woman joins she is almost certain to be ill during the very first year. As a rule the complaints are not serious and are mostly to be attributed to some form of neurosis, but this does not give the medical attendant any the less trouble. At the Friendly Societies' Medical Institute there is but one waiting-room and here a great number of patients congregate and have to wait for a long time under very unwholesome conditions. Many members complain of being kept waiting so long, and it is a curious and significant fact that the leaders who advocated the formation of this institute are themselves careful not to employ the institute medical officers, but go to private practitioners and pay full fees. At first the institute refused to pay sick allowances on medical certificates given by others than their own medical officers, but what with pressure of work and the ever-increasing number of members who resort to the private practitioners the certificates given by the latter are accepted when countersigned by the senior medical officer of the institute.

In 1898 the Yarmouth Friendly Societies' Medical Institute had 6820 members, with the result that there were 25,166 attendances at the dispensary, 10,955 visits paid to patients at their own houses, and 22,452 prescriptions dispensed. The senior medical officer was paid £305 and the junior medical officer £180. If we divide this total of £485 by the 36,121 visits and attendances the result is a trifle over 3¼*d.* for each medical consultation. As the total amount paid by the members for medical aid during the same year was £1224 18*s.* 5*d.* it will be seen that the institute realised a good profit out of its medical officers' work. Even if we make a liberal allowance for the value of the premises occupied, for the dispensing, and for the drugs it is probable that the medical officers are sweated to the extent of £300 or more a year. The position of the junior medical officer is so arduous and so badly paid that they all leave in a very short time. When the institute was first organised the members were led to believe that they would spend less than formerly. This has not proved to be the case and the subscriptions have not been reduced. They had to borrow £300 from the bank to furnish their premises and this complicates the situation. The institute also provides various little plums for its promoters. The secretary receives £20, the porter £36, the

treasurer £12 10*s.*, sums which constitute a substantial addition to an artisan's income. The medical officers get midwifery fees of 10*s.* 6*d.*, but there were only 67 births during the year, so that this does not constitute a large addition to their income. These medical officers depend solely on the institute and have to be careful to give the fullest attention to the members of the committee with the result that the ordinary members complain that they are neglected, especially in times of epidemic; consequently those who can afford it resort to a private practitioner, and the latter are now well satisfied with having got rid of their clubs.

As a case in point, a local practitioner explained to me that he used to attend two branches of the Eastern Star Provident Association. The members were all adult males and paid 4*s.* a year, so that the dispute about women and children did not affect them, nevertheless one of these branches suddenly left him and without even giving notice. He used to receive from this branch £14 a year. Some time after they had left him one of the members fell ill and sent for him and paid him the ordinary fees. After an illness of six months these amounted to £13 7*s.*, and the bill was duly honoured. Had the practitioner, who gave me this information, been still acting as medical officer to this society the patient in question would only have paid 4*s.* That is to say that the ex-medical officer received nearly as much from one patient as he used to receive from the entire branch, and he is well satisfied with being dismissed from club work. Starting from this instance to review his entire practice he found that he had received from the various Yarmouth clubs £325 10*s.* during the year 1896. Then came the medical lock-out and in 1897 he only received £49 1*s.* from the clubs, yet his total income for the year was only £40 7*s.* less than usual. Thus the increase in private practice compensates for the loss of the clubs and there is much less work to do. This experience was confirmed by several other practitioners and they all said that they were very glad to get rid of the clubs. This would not be the case if the clubs consisted of the right class of members. As at present instituted club practice cannot be properly carried out. For instance, one local practitioner explained that he had 100 railway servants under his charge. During the recent epidemic of influenza 11 of them were ill. If 11 per cent. of the members of the institute were to be taken ill simultaneously the two medical officers could not possibly attend all the sick. Indeed, it has been noticed that they do not visit their patients often enough and their visits are so brief that even in cases of influenza they not infrequently find their time too short to take the temperature. Formerly, when nearly all the practitioners at Yarmouth had clubs, the patients used to complain when they were neglected and the medical officer was summoned before the committee of his club. To-day, however, it is not much use complaining to the Friendly Societies' Medical Institute. The committee know full well that their medical officers are overworked, and therefore they feel that they are themselves indirectly to blame for any neglect that may occur. The ordinary members, however, are beginning to understand that the system does not work to their advantage and that they are not always tended with the necessary attention and care. Thus it becomes a matter of public interest that this system should be abolished or thoroughly reformed. The large number of members of the Friendly Societies' Medical Institute who prefer to pay for private practitioners, and do so, is a proof first of abuse and secondly that the medical aid given is not satisfactory. Indeed, the figures given above are a mathematical demonstration that the medical officers of the institute have too much to do, and therefore there must be some negligence. In the course of time, this fact will be more and more clearly realised and then we may expect still further changes. It is fortunate that the medical profession at Yarmouth is so well organised and is fully prepared to meet the exigencies of the situation as from day to day it is developed and modified.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Course of the Epidemic.—Plague in Australia.—The Extent of the Famine.—Lumsden's Horse.

PLAGUE is still on the increase. There have been 1869 deaths returned for the past week as against 1768 for the week previous. The increase is chiefly in Bengal, where 624 deaths have occurred as against 339 for the week before. It is reported that 604 deaths have occurred at Patna and in the district around. These figures are manifestly incorrect, as 87 deaths have been reported for Calcutta alone. In Bombay city the general mortality keeps fearfully high, 2400 deaths having occurred during the past week, a rate of 152 per 1000 per annum. For Feb. 7th 408 deaths have been returned, which is the highest on record. Small-pox appears to be increasing considerably. This simultaneous occurrence of another zymotic fever epidemic with plague is quite a new feature, as hitherto relapsing fever was the only infectious disease which has occurred along with plague. Cholera and dysentery have been exceptionally scarce. Unless the small-pox epidemic develops much more severely I shall expect to see a speedy decline of the general mortality as the high rate has now continued for several weeks and according to the indications of previous outbreaks it should now very soon rapidly decline.

Plague continues to attack various villages in the Punjab in a sporadic form. In Karachi, however, an improvement is reported. There is an increase in the Mysore State and Bangalore City and Cantonment.

In Calcutta the returns show more living cases discovered as well as deaths attributed to plague. In view of the outbreak at this season last year these facts are particularly ominous. The cold season in all parts of India attacked by plague is now practically over, so that its further development should convince those who hold to the seasonal theory that they are wrong. The water famine in Bombay and the general deficiency of the last rainfall in Western India may be put down as assisting the present outbreak in that city, but against such a deduction is the fact that the three previous attacks have not been accompanied by such deficiency and that it does not apply to other places.

A telegram from Colombo, dated Jan. 31st, states that plague has broken out in Adelaide, causing a tremendous scare throughout Australia.

Few people at home realise the extent of the famine which is at present existing in several parts of India. In consequence, however, of the admirable arrangements made for relief the distress is nothing compared with that of former times. In the British Provinces 2,694,096 persons were in receipt of relief last week, chiefly in the Bombay Presidency and the Central Provinces. In the Native States 788,512 were under relief, chiefly in the Native States in Rajputana, Central India, and Bombay. The greatest distress seems to prevail in the Central Provinces where nearly one and a half millions of people are under relief.

As some doubt has been thrown on the physique of the Volunteers proceeding from England to the seat of war it will be of interest to know that "Lumsden's Horse" now being formed in India consists of a very fine body of men. A large proportion are planters well accustomed to the saddle and the gun, who are of robust constitution and possess great physical powers. Leading an open life they are just the men to form an ideal regiment for the work in hand. These qualities, coupled with high spirits, energy, and great enthusiasm, complete the requirements for such a force. I understand that they are well equipped in every respect.

Feb. 7th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

War Notes.

A MEETING was held at the Medical Institute on Feb. 26th for the purpose of forming a local auxiliary to the organisation in London for providing comforts for the men of the Royal Army Medical Corps now in South Africa. The objects of the association were explained and subscriptions invited, as well as contributions of flannel shirts, socks, sleeping helmets, &c. Various officers were appointed and the hope was expressed that the results would be worthy of the profession in the Midland centre.—The students of Mason University College have made application to the War Office for permission to establish a Volunteer corps. It is proposed to form an additional company to the 1st Volunteer Battalion of the Royal Warwickshire Regiment, the membership being restricted to students. Over 90 names have been sent in and much enthusiasm has been exhibited. If the sanction of the War Office is

obtained it is expected that the new corps will be in an efficient condition by the opening of the first term of the Birmingham University in October next.

The Fight with Tubercle.

Sir James Crichton Browne lectured to the members of the Midland Institute at Birmingham on Feb. 26th, taking the above title as his subject. He advocated muscular exercise and stated his approval of military training for this purpose. Tubercle in milk, meat, and food was discussed and the vitality of bacteria was pointed out. The necessity for clean and dry dwellings, wider streets, and the purification of the slums was insisted upon with much eloquence.

Feb. 27th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Proposed Joint Parochial Hospital for Tuberculosis.

THE select vestry at their recent meeting discussed the draft order of the Local Government Board referred to in THE LANCET of Feb. 24th regarding the erection of a joint hospital for the treatment of tuberculosis by the select vestry and the West Derby and Toxteth boards of guardians, and it was practically decided to withdraw from the provisional arrangement which had been entered into with those two boards. The spirit of irresolution displayed by the select vestry in the matter of the proposed joint hospital has been a source of perplexity and irritation to the West Derby and Toxteth boards of guardians who, I understand, have announced their determination to proceed with the erection of a joint hospital independently of the select vestry.

The Liverpool School of Tropical Diseases.

The committee of the Liverpool School of Tropical Diseases have arranged to despatch a new expedition to the West Coast of Africa which will proceed up the river Niger and investigate further Major R. Ross's theory of the transmission of malarial fever by means of the mosquito. The *personnel* of the expedition has not yet been finally decided upon, but it will be composed of gentlemen who have devoted much attention to the question. The expedition will start at the end of March. Mr. Alfred L. Jones, the chairman of the school, has again kindly placed great facilities for travel at the disposal of the committee.

The Liverpool Eye and Ear Infirmary.

The eightieth annual report of the Eye and Ear Infirmary showed that 753 patients occupied beds last year compared with 709 during the previous year. 582 important operations were performed, as against 576 in 1898. In the out-patient department there were 5879 new eye cases and 2010 new ear cases. These have been attended to and prescribed for 20,054 and 6934 times respectively. The debit balance at the close of the year stood at £368 12*s.* 1*d.* and it would have been further increased but for the timely legacy of £250 from a deceased subscriber. The committee are indebted to the Hospital Saturday and Sunday Fund for the sum of £504. The committee regret that they are obliged to treat both legacies and donations as annual income, instead of paying off the balance of the mortgage debt of £1000, and creating a reserve fund, but at present they have no alternative. The decision of the corporation in regard to the payment of rates has added to the yearly expenditure of the hospital. The committee announced that Mr. Hugh E. Jones, who had filled the position of house surgeon and assistant surgeon, had now become an honorary surgeon. Allusion was made in a former issue of THE LANCET[1] to the change in the by-laws, at the instance of the committee, prolonging the term of office of the honorary surgeons to the age of 60 years and also giving privileges to the assistant surgeons after a term of years' service. No allusion has been made in the annual report to this important change. It was to be expected that the managers of the charity would have informed the subscribers at the annual meeting of these alterations of the by-laws, which, possibly, may require their sanction.

Extension of the Stanley Hospital.

The new out-patient department to which reference was made in THE LANCET of Feb. 24th was opened on Feb. 22nd by the Lord Mayor, in the presence of a numerous gathering of ladies and gentlemen. At the conclusion of the meeting the Lord Mayor handed to the treasurer a cheque for £50 to be devoted to the needs of the hospital, so much to be deducted from the amount as would make his daughter a life governor of the institution.

Feb. 27th.

[1] THE LANCET, April 15th, 1899, p. 1057.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Professorship of Practice of Medicine in Edinburgh.

THE following are the candidates for this position: Dr. John Wyllie, Dr. Byrom Bramwell, Dr. Alexander James, and Dr. G. A. Gibson. Other names have been mentioned, but these gentlemen, it is understood, are the only persons openly in the field. The appointment will be made in April.

Scottish South African Hospital.

At a meeting of a sub-committee of the Scottish South African Hospital held on Feb. 23rd in Edinburgh in the City Chambers it was recommended that Professor Chiene should be appointed to act as head of the hospital and that Mr. David Wallace should be appointed as second in command to Professor Chiene; also that the four assistant surgeons should be Dr. C. M. Cooper, Dr. A. H. Watt, Dr. G. L. Chiene, and Dr. James Miller. It was also recommended that Miss Beveridge, matron of the Longmore Hospital, should be appointed as matron of the South African Hospital. Sir J. R. Andrew Clark, late Surgeon-Major A.M.S., who will accompany the hospital to South Africa as the representative of the Army Medical Department is arranging matters of detail with Professor Chiene.

Lecture on Bacteriology.

On Feb. 20th Dr. Klein, lecturer on General Anatomy and and Physiology at St. Bartholomew's Hospital Medical School, delivered a lecture in connexion with the Edinburgh Philosophical Institute on "Bacteriology: its Aim and Object."

Epidemic of Influenza in Edinburgh.

At a meeting of the Public Health Committee of Edinburgh Town Council held on Feb. 20th Sir Henry Littlejohn presented a report on the present epidemic of influenza in the city. Since the beginning of January there had been 82 deaths in Edinburgh due to influenza or its complications. Of this number 41 deaths occurred in January and 41 since the beginning of February. There was thus an increase in the death-rate from influenza. Moreover, the disease, which originally appeared to be confined to the districts of Morningside and Grange, had now spread to other parts of the city. The deaths from influenza this year show a marked increase over the number which occurred as the result of the disease in 1892.

Feb. 27th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Health of Dublin.

THE committee appointed to inquire into the causes of the high death-rate of Dublin continue to meet each day in the City Hall. A large amount of information has been gathered from the crowd of witnesses examined, but nothing new or startling has transpired. Some interesting evidence was given on Feb. 26th by Dr. E. W. Hope, the medical officer of health of the city and port of Liverpool, and by Dr. W. R. Smith, the medical officer of health of Woolwich, London, both of whom made instructive comparisons between the state of things in Dublin and that which prevails in Liverpool and in London. Dr. Hope stated that the tenement houses in Liverpool were very much smaller than those in Dublin and were in a far better condition as regards sanitation. He looked upon the closet accommodation in the Dublin houses as "extremely bad." In Liverpool they had 35,000 people living in insanitary houses, but there appeared to be far more in Dublin. In the witness's opinion, in order to put Dublin on fair terms for the purpose of comparison with English

towns they should include the surrounding townships. If the city proper was considered without its natural extensions it should be compared with the central and more insanitary portions of English towns. In reply to Alderman Meade Dr. Hope stated that he did not know of a single city similarly circumstanced to Dublin, where the better classes lived outside and the poor lived in the centre; in fact, there was not a single one. On the question of the Notification of Infectious Diseases Act the witness stated that it was a matter of the greatest astonishment to him to learn that it was imperfectly carried out in Dublin, and that in some of the neighbouring townships which were geographically a continuation of Dublin it was not in force at all. He stated that in Liverpool it had never been necessary to prosecute a medical man for non-observance of the provisions of the Act. In fact, he did not know what they could have done there without the invaluable coöperation of the medical profession. Dr. Hope stated that he wished to say this with the greatest publicity and the greatest emphasis. On this question of the notification of infectious diseases, while agreeing with the general evidence of the last witness, Dr. W. R. Smith was no less emphatic; he thought it was most unfair to the sanitary authority that the Public Health Department were not presented with full information as to the presence of disease within their midst.

The New Registrar-General for Ireland.

Mr. Robert Edwin Matheson has been appointed by the Lord Lieutenant Registrar-General for Ireland in succession to the late Dr. T. W. Grimshaw. Mr. Matheson has been connected with the staff of the Registrar-General's office since 1865, and is, of course, more than familiar with the practical work of the department. He has been a member of the Irish Bar since 1875 and has filled the position of secretary to the Registration Office for many years. He has, moreover, held the responsible post of assistant registrar-general since 1879, acting as skilled assistant and legal adviser to the late Dr. Grimshaw. Mr. Matheson is the author of many works dealing with legal and statistical matters, and he is recognised on all hands as a man of marked ability in the special province to which he has devoted himself. It is worthy of remark that he was one of the Census Commissioners in 1881 and in 1891 and that he will have an opportunity next year, when the general census takes place, of again giving his valuable services to the public in connexion with that important statistical work. There are obvious reasons why the post of registrar-general should if possible be held by a physician, but in the absence of any medical candidate highly qualified for the position Mr. Matheson's appointment has given general satisfaction.

The Belfast Workhouse.

The half-yearly report of the Local Government Board inspector (Mr. Agnew) on the workhouse at Belfast has just been made public. He says that the Union Children's Hospital has twice the proper number of inmates for the available air-space, and he considers its position to be unsuitable. He reports that the quality of the beef supplied to the institution is inferior and he says that the number of the nursing staff is still under the required standard, the night nursing staff in particular being very insufficient. Further, in contravention of the Local Government Board's order, 62 healthy paupers are employed as attendants on the sick by day and 22 by night. Mr. Agnew reports that large numbers of the inmates classified as infirm men would not only be able to work but would be healthier and happier if they were employed at some light occupation. He thinks that stone-breaking, oakum-picking, and wood-chopping should be engaged in, and that a severe labour test should be applied to the large number of healthy inmates in the Belfast Workhouse. The Local Government Board request the guardians to take this important question into their careful consideration. It is really preposterous that, in a city like Belfast, where, owing to the large number of industries, everyone who is able and willing to work can get employment, taxpayers should be saddled with the support of healthy lazy paupers who find the Belfast workhouse a most agreeable hotel. Mr. Agnew's report has been referred by the guardians to sub-committees for further consideration.

The Adulteration of Milk in Belfast.

Several contractors to the Belfast Workhouse have been heavily fined for the adulteration of the milk-supply with water. The resident magistrates are determined to put down the practice and have inflicted fines of £50, as smaller amounts do not seem to produce any effect.

The South Charitable Infirmary, Cork.

The constitution of the Board of Governors of the Cork South Charitable Infirmary has been completely altered by the new Local Government Act. The board now consists of 29 members. The subscribers send 12 representatives, the county council nine, and the city council eight. The new board has issued its first annual report, containing some interesting items, from which it appears that the subscriptions represent a third of the total income, and that the expenditure exceeded the receipts by £107. There were 11,011 attendances in the extern departments. The daily average of intern patients, which was the highest for many years, was 77 as against 74 for 1898. The total number of intern patients was 1108. During the year the electric light had been installed at a cost of £101. Through the munificence of the Countess Murphy a very handsome chapel had been erected for the use of the Roman Catholic patients. The board recorded with regret the death of Dr. W. C. Townsend who had been consulting physician and had given 40 years' "faithful service to the institution, being esteemed as a painstaking and earnest member of the staff ..... The unselfish devotion of the medical staff is ever a gratification to the governors whose confidence and goodwill they fully enjoy in the discharge of their onerous duties." The medical and surgical report recorded that although the most formidable surgical operations were performed the death-rate was only 2 per cent.

Feb. 27th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever in Paris.

TYPHOID fever is the universal subject of conversation at this moment in Paris. A number of cases, of which four have ended fatally, have occurred in a *lycée* and the Minister of Education has given orders for all the pupils to be sent home. This order has given rise to much public discussion in the press and elsewhere. Another *lycée*, situated in a totally different quarter, was also said to be infected, but the report was false, for the only cases of illness which have occurred are some of influenza. Taking advantage of the public interest in the matter Dr. Thoinot read a paper before the Academy of Medicine which has been a great deal talked about. At present he said there was nothing like an epidemic, properly so-called, of typhoid fever in Paris; at all events, the death-rate from the disease is not to be compared with that of last year, but the statistics certainly show a lamentable increase in the complaint. In 1895 the number of cases notified to the Prefecture of Police was 1389, in 1896 it was 1243, in 1897 it was 1342, in 1898 it was 1288, and in 1899 the number ran up to 4329. The number of deaths, which was 700 in 1894 (the last year in which there was a real epidemic), was 270 in 1895, 260 in 1896, 250 in 1897, 255 in 1898, and 754 in 1899. These figures are not relatively large if the population of Paris be taken into consideration, but they are much too high considering the sacrifices which the city of Paris has made to ensure that all the water used for alimentary purposes should be spring water and that proper drainage facilities should be insured. Dr. Thoinot considers that it is obvious that each new case arises from some contamination either in the water-pipes, the reservoirs, or the gathering grounds. In this connexion he refers to the remarkable researches of M. Martel who has for the first time made a complete study of underground water-courses, and who has, in fact, created a new science called "*spéléologie*." Dr. Thoinot has made a study of the various sources of the water taken up by the city of Paris for its drinking-water supply and comes to the conclusion that there is no trust to be placed in those sources of origin called "*vauclusiennes*"—that is to say, those in which the water traverses chalk beds and reappears on the surface after a long course underground but does not undergo filtration. There is special danger in those cases where the population around the head-waters have defiled them in any way. This state of of matters is to be found in a great number of Parisian sources of water-supply. Dr. Thoinot pointed out that the headwaters of the Avre lie in an uninhabited country and

that the quarters of Paris deriving their supply from this source have escaped the typhoid infection, while those deriving their supply from the Vanne have exhibited a high death-rate. The remedy is simple; the most complete precautions must be taken to prevent contamination of the head-waters or their tributaries and accurate chemical and biological examinations should be made. If any source of contamination is recognised the gathering ground must be removed to a point above it.

The French Edition of the "Index Medicus."

Last week there occurred in Paris an event the interest of which extends far beyond the frontiers of France—namely, the appearance of the first number (that for January, 1900) of *Bibliographia Medica* a work which it is intended shall carry on in Europe the traditions of the *Index Medicus*, the well-known publication of American bibliographers which was formerly published at Washington but ceased some six months ago. For the first time, not in France alone but also in Vienna and Berlin, there has been set on foot a bibliographical review comparable to the great work of Flechter and Billings, while it may even be adduced that the present work is superior in one way—namely, in the system of classification adopted. This great effort could not have met with success but through the International Institute of Scientific Bibliography at Paris, of which the director is Dr. Marcel Baudouin, the well-known journalist. The January number, which appeared on Feb. 15th, contains the greater part of the international bibliography of the medical sciences for January, 1900, and such a complete *tour de force* of editing and printing could not have been carried through except by using a staff of more than 150 persons who are employed in the press of the Institute of Bibliography at Paris. The new publication, which will deal with the whole of the international bibliography of the medical sciences, is founded on principles analogous to those of the American *Index Medicus* and will carry on the remarkable scientific traditions of that work which was so valuable. Thanks to the directors, Dr. C. Potain, member of the Institute and professor of the Faculty of Medicine at Paris, and Dr. Charles Richet, who is also a professor, notable improvements have been made in the editing and in the classifying of the subjects — which last is now practically perfect, so that search for any particular subject is rendered easy and rapid. The work, which will be issued monthly, as was the *Index Medicus* will contain some 4000 references per number of 80 pages at least, so that the number of references for the year will be about 50,000. The editors contemplate issuing special bibliographies as yearly and not monthly publications. These numbers, of which only a few copies will be issued, will be published by subscription. All the most modern methods of typography will be employed and the composition will be done by a machine, a method which offers great advantages for certain kinds of printing, but should occasion arise no extra expense will be spared. The annual subscription will be 50 francs a year for France and 60 for foreign countries, in place of 125 francs which was the subscription for the last American edition.

Feb. 27th

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Strophanthus as a Sedative.

DR. FEILCHENFELD writing to the *Centralblatt für Chirurgie* recommends the administration of tincture of strophanthus previously to the production of anæsthesia by chloroform, as pre-anæsthetic excitement is thereby avoided. This is the case not only in cardiac failure but also in neurasthenic patients who are very much afraid of undergoing an operation. He gives five drops of tincture of strophanthus on two evenings and on the morning before the operation. Strophanthus is preferable to the bromide of potassium commonly used in these cases.

Collective Investigation on Carcinoma.

On the invitation of Professor von Leyden a committee lately met in Berlin in order to arrange a great collective investigation on carcinoma. The committee, which is still in process of formation and will be augmented by other members, included representatives of the Imperial Health Office, the Government Medical Department, and the Statistical Office. Professor von Leyden was elected chairman and Dr. George Meyer and Dr. Kirchner were elected secretaries.

A Radical Cure for Erysipelas.

A curious case is reported by Dr. Mosbacher of Bochum in the *Münchener Medicinische Wochenschrift*. He was consulted by a workman for erysipelas of the face and prescribed an ointment of 10 per cent. ichthyol. The next morning the wife of the patient (a Pole) came to Dr. Mosbacher complaining that the medicine had produced such severe diarrhœa and colic that her husband was unable to persevere with it. Dr. Mosbacher, greatly astonished, went to the house and found that instead of using the ointment in the ordinary way the man had taken it by the mouth. The erysipelas had nearly disappeared and the patient in broken German expressed his gratitude for the somewhat strong but very efficacious medicine which had done him so much good. Dr. Mosbacher adds that notwithstanding this success he has refrained from administering ichthyol internally.

Medical Congresses.

The Congress of Internal Medicine will, as you have already announced, meet this year in Wiesbaden under the presidency of Professor von Jaksch of Prague. The principal subjects to be discussed are: the Treatment of Pneumonia (introduced by Professor Korányi of Budapest and Professor Pel of Amsterdam) and Endocarditis (introduced by Professor Litten of Berlin).—The meeting of the Balneological Society will be held from March 8th to 13th at Frankfort. Professor Winternitz will read a paper on Phototherapy, Professor Schott of Nauheim on the Treatment of Diabetic Diseases of the Heart, Dr. Groedel of Nauheim on the Balneological Treatment of Diseases of the Kidney, Dr. Pariser of Homburg on Chronic Nervous Diarrhœa, Professor Kisch of Marienbad on Cardiac Complaints consecutive to Diseases of the Uterus, and Dr. Abbée of Nauheim on Arterio-sclerosis and Angina Pectoris.—The Surgical Congress will meet as usual in Berlin in the week following Easter, Professor von Bergmann of Berlin in the chair. Professor Czerny will read a paper on the Treatment of Unoperable Carcinoma, Professor Krönlein on the Results of Operations for Carcinoma of the Intestines, Professor Rehn on Resection of the Anus, Professor Israel on Operations for Renal and Ureteral Calculi, and Professor Augerer on Operations for Abdominal Contusions.—The German Committee for the International Medical Congress at Paris has been formed. Professor Virchow will be the chairman, Dr. Posner and Dr. Eulenburg will be the secretaries, and Dr. Bartels will be the treasurer. The other members are Dr. Aub of Munich (President of the Practitioners' Association), Professor von Bergmann of Berlin, Professor von Bruns of Tübingen, Dr. von Coler (general-staff-surgeon of the army), Dr. Curschmann of Leipsic, Professor Erb of Heidelberg, Dr. Ewald of Berlin, Dr. Leut of Cologne (President of the Committee of Medical Chambers), Professor von Leyden, Professor Liebreich and Professor Waldeyer of Berlin, Professor Ziemssen of Munich, and others.

The late Professor Meyer.

Dr. Ludwig Meyer, professor of psychiatry and director of the University Lunatic Asylum at Göttingen, died in that city on Feb. 8th. Professor Meyer, who was born in 1826, was one of the leading specialists for mental diseases and was the founder of the modern treatment of lunatics in Germany. After holding the appointment of assistant physician to the lunatic department of the Charité Hospital in Berlin he went from there to Hamburg as chief physician to the lunatic department at the General Hospital. He was one of the earliest and most fervent advocates of the non-restraint system in Germany, and very soon after entering on his Hamburg appointment he sold by public auction all the appliances previously used for the restraint of lunatics. He also allowed free visiting of the lunatics by their friends, just as in the case of patients of other classes. It was under his auspices that the great asylum at Friedrichsberg, near Hamburg, was established and at a later period the asylum at Göttingen, where he was appointed professor. He held that a modern asylum ought to be built according to the principles of a hospital and not of a gaol. Apart from his labours on behalf of the insane he did much work in the pathology of mental diseases and in conjunction with

the late Professor Griesinger he edited the *Archiv für Psychiatrie*.

The late Professor Leichtenstern.

Professor Leichtenstern, the chief physician to the Cologne General Hospital, died from influenza on Feb. 23rd. Though not on the staff of a university he did much work in his special branch, internal medicine. His principal subject was the ankylostomum duodenale which he was the first to observe in Germany. He published numerous articles in the medical journals on the antitoxin treatment of diphtheria, on tuberculin, on cerebro-spinal meningitis, and many other topics. He was co-editor of Ziemssen's Handbooks of General and Special Therapy and of Gerhard's Handbook of the Diseases of Children. Professor Leichtenstern was the most distinguished consultant in Cologne.

Feb. 26th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Alive under the Coffin-Lid!

I MAKE no apology for returning to this ghastly theme. The tragic "case in point" reported in THE LANCET of Feb. 24th from Lecce (Apulia) has thrilled the kingdom with horror "from the Alps to Etna"—horror shared by the foreign resident who may, as the result of illness, be equally the victim of Italian usage which makes burial follow so closely on death, real or apparent. Popular interest in the theme is now accentuated by indignation, combined with panic, and increased vigilance over the circumstances intervening between the death certificate and the offices of the undertaker is leading to the discovery of cases only less gruesome than that of the Apulian peasant woman. The latest of these comes from no less a quarter than the Ligurian Riviera, that lovely stretch of coast indented with sun-traps of which Genoa and Spezia are the chief towns. In the village of Roccabruna near Porto Maurizio an old countryman, Raffaele Rainoldi by name, fell ill, failed to recover, was certified as dead, and was laid in the coffin, with the despatch characteristic of Italian use and wont on such occasions. The lid over him was actually being screwed down when he was felt to move and then heard to speak. Medical aid was at once invoked by the family, half beside itself with mingled joy, surprise, and horror; and, thanks to restoratives skilfully applied, the old man came round, recovered full consciousness, and inspired hopes of his recovery. These, however, were not realised. He lingered for two days and then died, death being this time not "apparent" but real. Coincident with the chronicling of these cases the lay press is opening its columns to the discussion of the familiar devices—some of which are actually in force in mortuary chapels on both sides of the Alps—by which the individual laid out as dead and even enclosed in the coffin can still have air to breathe and the power to attract notice and assistance. But none of these methods are of other than doubtful efficacy—the apparatus, for one thing, being too delicate and complicated not to get easily unworkable. A better "device" would be the insistence on a reasonable interval—such as prevails in England—between the death certificate and burial or cremation, and also on a more careful and less haphazard examination of the "dead" before certifying him as such.

The Crusade against Tuberculosis.

All the omens augur favourably for the success of the "Congresso contro la Tubercolosi" to be held at Naples between April 25th and 28th next. In the first place, there is a widespread, intelligent, and even enthusiastic public sympathy with its object. This feeling is fostered by the Government, which through the Minister of the Interior has announced a competition, open to all the engineers of Italy, for the best plan for a sanatorium designed for the tuberculous poor. The competitors must lodge their plans at the Ministry of the Interior not later than April 30th, 1900, at 12 o'clock noon, and the author of the "first-best" plan will receive 5000 lire (£200) and the author of the second-best 3000 lire (£120). Again, as to the Congress itself, no effort has been spared to render it a worthy sequel to its predecessors held at Paris and Berlin. Queen Margherite is its "high patroness" and the Minister of Public Instruction is its president. Its organising committee, presided over by Dr. Enrico De Renzi, Professor of Clinical Medicine in the University of Naples, includes some of the most authoritative names in Italy. Its programme, finally, of which I have been favoured with an early copy, attests the care with which the whole subject has been surveyed and its discussion apportioned among those best fitted to undertake it. The Congress will consist of four sections, the first dealing with Etiology and Prophylaxis, having the Rector Magnificus of Padua (Dr. De Giovanni) as president, with such men as Murri of Bologna, Celli of Rome, Manfredi of Naples, and others hardly less distinguished to assist him. The second section takes up the pathological and clinical side of the subject and is appropriately presided over by Professor Maragliano of Genoa, also adequately reinforced by no less authorities than Grocco of Florence, Bizzozzero of Turin, Marchiafava of Rome, and Senise of Naples. The third section devotes itself to Therapeutics and has for its president Professor E. De Renzi, who will have as assessors Queirolo of Pisa, Cervello of Palermo, and Galvagni of Modena. The fourth section deals with Sanatoria and its president is Professor D. Capozzi of Naples, also worthily supported by men like Forlanini of Turin, Rummo of Palermo, Carlo Fedeli of Pisa, and others of "light and leading" in that *métier*. All physicians, nature-students, sanitary engineers, promoters of public hygiene, and social philanthropists will be welcome at the Congress, and have only indeed to send in their names to the "Segreteria del Comitato, nella Prima Clinica Medica, Ospedale di Gesù e Maria, Naples," whence they will receive a ticket of admission, price 20fr., which entitles them to the "Atti" and other publications of the Congress, to reductions in the railway and steamboat fares, to the trips to Pompeii, the Gulf of Naples and Palermo, and to all the privileges open to the "Congressisti," Italian and foreign. In connexion with the Congress the magnificent "Esposizione d'Igiene," under the patronage of the Prince of Naples, will also be open—a collection unrivalled, I believe, in richness and variety, representing the high water-mark of modern hygienic resource.

Feb. 27th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

The Department of Agriculture on the Production of Milk.

MAJOR ALVORD, chief of the dairy division of the Bureau of Animal Industry, Washington, states that since July, 1895, there has been a dairy division under his care, the function of which is to acquire and disseminate information useful to dairymen. Up to this time there has been but little surplus dairy products in the United States with the exception of cheese, but the prospect of a greater surplus in the future being good this division has been looking for foreign markets. It proposes to make a good display at the Paris Exposition this year. The first attempt to count the cows in the United States was made in 1840, and though this attempt has been made at each decennial census no approximate total has been received. A great effort will be made at the next census to make a fairly accurate count. It is probable that there are from five to five and a half millions of cows kept in the States for the purpose of producing milk for food, or about one cow to every 14 persons of all ages. Milk is better handled now than it was a few years ago, especially in the matter of transportation and distribution; and milk has improved as to quality, as shown by the proportion of butter fat and total solids and its greater freedom from bacterial contamination. This improvement is attributed to individual dairymen and companies rather than to legislation. There has been some unnecessary alarm concerning the danger of milk as a food. A careful study of the milk-supply of the United States as a whole has convinced Major Alvord that the actual presence of disease germs in such milk-supply is very rare and that the cases of real injury from these germs are rarer still; most of the evidence on this subject is negative and in favour of milk rather than against it. It is generally conceded that the adding of preservatives to milk is most undesirable, as the process puts a premium on carelessness and dishonesty. Major Alvord affirms that he is strongly disposed to make the same statement regarding sterilisation and Pasteurisation; these methods may be employed on occasions but

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never as a rule. He would advocate at the present time the use of pure natural milk as being far better than all other preparations of milk as food. As to the value of skimmed milk as a food, he remarks that 100 pounds of skimmed milk contained more valuable food for the human being than 100 pounds of "whole" milk, and yet the sale of this article was prohibited in New York city because the city authorities had not felt like exerting themselves sufficiently to regulate properly a most desirable traffic. Skimmed milk was sold in Boston and very largely in the Connecticut Valley to the milk operatives, and the latter partook very largely of this product, greatly to their advantage. Another great inconsistency on the part of the authorities of New York city was that they freely admitted the sale of condensed skimmed milk but not of natural skimmed milk.

Women Nurses in Military Hospitals.

A Bill has been introduced into Congress to require the permanent employment of women nurses in army hospitals. It provides that there shall be a superintendent of women nurses, who shall be a woman graduated from a general hospital training school for nurses, having a course of instruction lasting not less than two years, who shall be appointed by the Secretary of War at a salary of $2000 per annum; that the nurses shall be graduates of general hospital training schools having courses of instruction lasting not less than two years; that they shall be appointed by the surgeon-general under regulations approved by the Secretary of War; that they shall receive $40 per month when on duty within the limits of the United States and $50 when on duty outside the limits of the United States.

The Losses of the Volunteer Troops in the Spanish-American War.

The Adjutant-General of the army has recently issued a statistical exhibit of strength of the volunteer forces called into service during the war with Spain, with losses from all causes. The total number of volunteers accounted for on muster rolls is 10,017 officers and 213,218 men enlisted; total, 223,235. Of officers, 18 were killed in action; 90 were wounded, of whom three died; 119 died from disease, four by accident, one by drowning, three by suicide. Of the men, 4544 were discharged for disability; 190 were killed in action; 1189 were wounded in action (78 of whom died from their wounds); 3729 died from disease, 97 by accident, 21 by drowning, 11 by suicide, and 30 by murder or homicide.[1] Among the officers mustered in were 1010 general and staff officers, including 143 belonging to the medical department of the volunteers. The only casualty among these medical officers was one death from disease. Of the staff officers three were killed, one belonging to the quartermasters' department, one to the subsistence department, one to the signal corps.

Progress of the Plague.

In view of the progress of the bubonic plague, the United States Marine Hospital Service has taken measures to prevent its introduction into this country. 15 officers of this bureau have been detailed for service in foreign seaports, and three are already on duty at Cadiz, Barcelona, and Naples. The other officers are to be stationed at London, Liverpool, Southampton, Queenstown, Glasgow, Havre, Hamburg, Genoa, Antwerp, Rotterdam, Bremen, and Marseilles. These officers will inspect all vessels bound for the United States and keep the bureau informed as to the sanitary condition of the various cities.

Death-rates in Cities and States.

According to the recent records of the Marine Hospital Service the most unhealthy town in the United States was Liverpool, N.Y., with a death-rate per 1000 of 44·17, the population being 1200. Millerstown, Pa., with a population of 1162, reported only one death from any cause in 1898. Homestead, Pa., bears away the palm of healthiness; with a population of 10,000 there were 27 deaths in 12 months. Cleveland, Ohio, had a death-rate of 13·63; New York City, 19·28; Boston, 20·09; Baltimore, 19·10; Washington, 20·74; Chicago, 14·08; St. Louis, 14·23; and San Francisco, 19·41. The twin cities of Minneapolis and St. Paul had a death-rate of only 9·16 against that of New Orleans of 26·91. The most healthy conditions exist in the North-West and the region between the Mississippi river and the Rocky Mountains.

[1] "Murder or homicide" are the words which our correspondent has written, but how so many murders or homicides among the troops came about we are at a loss to guess.—ED. L.

The New President of the New York State Medical Society.

At its recent meeting in Albany the Medical Society of the State of New York, U.S.A., elected to the presidency Dr. A. M. Phelps of New York City. The new President has been chosen from the surgical side of the profession and is a distinguished worker in orthopædics. He is a graduate of the University of Michigan, and is now professor of surgery in the University of Vermont and professor of orthopædic surgery in the New York Post-Graduate School of Medicine.

The Physical Fitness of Railway Employés.

At a recent meeting of the New York State Association of Railway Surgeons the general claim agent of a western road stated that the last report of the Inter-state Commerce Commission informs us that there were 189,396 miles of railroad in this country and that 874,558 men were employed in the operation and maintenance of the same; that last year 489,444,189 passengers were carried and 741,705,946 tons of freight moved; that during the year 1898 there were 1958 employés killed, 31,761 injured, and 4680 other persons killed and 6176 injured. This frightful loss of life, together with the great loss of property, suggested that some standard of efficiency should be demanded form the employés. If a system of examination and the adoption of an age-limit were established the following benefits would be secured:—1. The company would secure the services of men who were physically capable of performing their duties properly and who would in all probability be able to do so for many years. 2. Men who were physically unfit for the work would be kept out of the service and the risk their employment would necessarily entail would be avoided; and at the same time the company would be protected from fraudulent claims for injury which this examination would detect. 3. The number of accidents and resulting expense would be reduced. 4. By reducing the number of accidents and making the business less dangerous a higher class of men would be encouraged to enter the service. 5. In case of injury it was well known that a sound man would get well quicker and make a better recovery than an infirm or diseased one, a fact which reduces the expense of adjusting his claim as well as the cost of caring for him.

Feb. 18th.

Obituary.

SAMUEL HYDE, M.D. ST. AND., M.R.C.S. ENG., L.R.C.P. EDIN.

BY the death of Dr. Samuel Hyde, which occurred on Feb. 8th, Buxton loses one of her best known practitioners. Samuel Hyde was the son of Francis Hyde of Buxton, and entered King's College, London, as a medical student in 1872, when he was aged 21 years. In 1875 he obtained a Certificate of Honour in Obstetric Medicine, and qualified as a Member of the Royal College of Surgeons of England in 1877. He then started in practice at Buxton and for a considerable portion of the last 23 years was associated with the "Peak Hydro-Thermal" establishment. He devoted himself entirely to his practice and never took any part in the public affairs of the town. He was one of the original members of the British Balneological Society, was chairman of its council, and later became editor of the journal of the society. He wrote largely on the various subjects connected with balneology and was author of, amongst other works, "Buxton: its Baths and Climate," which reached a fourth edition in 1898; "Notes from Spa Practice," 1895; "The Therapeutic Value of the Buxton Waters," 1895; "The Causes and Treatment of Rheumatoid Arthritis," 1896; and "On the Uses of Animal Extracts in the Treatment of Chronic Joint Affections." Besides these he contributed various papers upon balneological subjects to the periodicals, among others an "Analysis of 200 Cases of Sciatica," which appeared in THE LANCET of May 9th, 1896. During the early part of last summer Dr. Hyde developed symptoms of intestinal trouble which, however, passed away. At the beginning of the winter, however, obstruction of the bowels gradually supervened, for the relief of which an inguinal colotomy was performed. The mischief was found to be malignant in nature and he gradually sank,

dying on Feb. 8th, aged 50 years. He was buried in the cemetery at Burbage upon Feb. 13th by the vicar of Buxton in the presence of a large number of friends. He leaves a widow and one daughter.

JOSEPH WILLIAM YOUNG HOWISON LAVIES, L.F.P.S. GLASG., M.S.A.

THE death is announced from acute pneumonia of Mr. J. W. Y. H. Lavies. All old King's College men who were his contemporaries will sincerely grieve for his comparatively early decease, for he was one of the most popular men of his time during his career at King's College. He was the son of a medical man, Dr. J. Lavies of St. George's-road, and after qualifying he settled down into practice and rapidly gained the affection and confidence of an increasing circle of patients. But the rapid onset of pneumonia consequent on a chill caught a few days before led to his death at the early age of 46 years.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the Preliminary Science Examination for the Licence in Dental Surgery, in Chemistry, Physics, and Practical Chemistry:—

Percy David Anderson and Hermann Bryan, Victoria Science and Art Schools, Southport; George Stanley Bateman, Birkbeck Institute; William Bateman Dougan, Owens College, Manchester; Frederic Neidhart Fox, Municipal Schools of Science, Art, and Technology, Gloucester; Arthur William Gant, Hymers College, Hull; Wilfred Ernest Griffin, Guy's Hospital; William Richard Parker, School of Science, Technology, and Art, Liverpool; Ernest Harriman Tice and Stanley Arthur Tice, South-West Polytechnic Institute, Chelsea.

Eight gentlemen were referred to their studies for three months.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS—The following gentlemen having passed the necessary examinations have been admitted Diplomates in Public Health:—

John Allison, M.D., C.M. Edin., F.R.C.S.Edin., Edinburgh University; Arthur Douglas Cowburn, L.R.C.P. Lond., M.R.C.S. Eng., M.D. Brux., University College Hospital; Hugh Ernshaw Finch, M.B., B.Ch. Oxon., Oxford University and London Hospital; Harry Percival Foulerton, L.R.C.P. Lond., M.R.C.S. Eng., St. George's Hospital; Shridhar Bheekajee Gadgil, L.M. and S. Bombay, Grant Medical College, Bombay, and University College, London; Harry William Henshaw, L.R.C.P. Lond., M.R.C.S. Eng., St. Bartholomew's Hospital; John Newton Martin, L.R.C.P. Lond., M.R.C.S. Eng., St. Bartholomew's Hospital and University College, London; William Dunmore Murray, M.B., C.M. Glasg., Glasgow University and Jenner Institute; Ernest Jackson Smyth, L.R.C.P. Lond., M.R.C.S. Eng., M.D., B.S. Lond., University College Hospital; Alfred Spitteler, M.B., C.M., Medical College, Madras, and University College, London; David Jones Thomas, L.R.C.P. Lond., M.R.C.S. Eng., London Hospital; Robert Edwin Gooné Tilleke, L.R.C.P. & S. Edin., M.D. Brux., Ceylon Medical College, Edinburgh University and King's College, London, Frank Harris White, L.R.C.P. Lond., M.R.C.S. Eng., L.S.A. Lond., London Hospital.

Three gentlemen were referred to their studies for six months.

SOCIETY OF APOTHECARIES OF LONDON.—In February the following candidates passed in the subjects indicated:—

Surgery.—C. B. S. Amos (Sections I. and II.), Royal Free Hospital; C. A. W. Egan, Dublin and Charing-cross Hospital; W. J. H. Hepworth and O. E. Lemin (Section I.), London Hospital; R. V. A. Mosley (Sections I. and II.), Leeds; S. Page (Section I.), Birmingham; A. Y. St. Leger (Section I.), Cambridge and St. Mary's Hospital; N. Walmisley, St. Bartholomew's Hospital; and A. J. Watson (Section I.), St. Mary's Hospital.

Medicine.—C. B. S. Amos (Section II.), Royal Free Hospital; J. F. Hodgson, Manchester; J. W. H. Morrison (Sections I. and II.), Durham; R. V. A. Mosley (Sections I. and II.), Leeds; and A. C. Oliver (Section I.), Charing-cross Hospital.

Forensic Medicine.—J. F. Hodgson, Manchester; J. W. H. Morrison, Durham; R. V. A. Mosley, Leeds; and A. C. Oliver, Charing Cross Hospital.

Midwifery.—W. Alcock, Sheffield; C. E. C. Child, Charing Cross Hospital; J. I. Halstead and J. F. Hodgson, Manchester; G. J. W. Keigwin, London Hospital; A. E. Malaher, St. Thomas's Hospital; R. V. A. Mosley, Leeds; E. A. Quirke, Birmingham; J. C. S. Rashleigh, St. George's Hospital; and M. J. Ryan, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates entitling them to practise Medicine, Surgery, and Midwifery:—C. B. S. Amos, C. A. W. Egan, W. J. H. Hepworth, R. V. A. Mosley, and N. Walmisley.

FOREIGN UNIVERSITY INTELLIGENCE.—*Amsterdam:* Dr. J. H. Eberson has been recognised as *privat-docent* of Diagnosis.—*Berlin:* Dr. Julius von Michel, Professor of Ophthalmology in Würzburg, has been offered and has accepted the posts of Director of the University Eye Clinic and Professor of Ophthalmology, in succession to Dr. Schweigger, who is retiring at the close of the current winter session. Dr. von Michel was formerly assistant to Professor Horner in Zürich and subsequently taught ophthalmology both in Leipsic and Erlangen. Dr. Karl von den Steinen, formerly assistant to Professor Westphal in the Charité, has been appointed Extraordinary Professor of Anthropology.—*Copenhagen:* Dr. Reiss having attained the age of 70 years is retiring from the chair of Medicine.—*Innsbrück:* Dr. H. Malfatti has been appointed Extraordinary Professor of Medical Chemistry.—*Lund:* Dr. J. Borelius has been appointed Professor of Surgery.—*Vienna:* Dr. Julius Neumann has been recognised as *privat-docent* of Midwifery and Gynæcology.

CITY ORTHOPÆDIC HOSPITAL.—A series of lectures upon Elementary Anatomy and Physiology, Nursing (especially of Orthopædic cases), Application of Splints, Bandages, and Antiseptic Dressings, and Treatment of Patients Before and After Anæsthetics, &c., will be delivered weekly at the City Orthopædic Hospital, Hatton-garden, E.C., by Mr. Noble Smith, Mr. John Poland, Mr. Chisholm Williams, Mr. Jackson Clarke, and Mr. Henry Davis. The lectures will be given on every Tuesday from March to July inclusive at 5.30 P.M., and will be free to all nurses.

FESTIVAL DINNER OF THE SOCIETY FOR TRAINING TEACHERS OF THE DEAF AND FOR THE DIFFUSION OF THE GERMAN SYSTEM.—In the absence of Lord Londonderry through illness, Lord Egerton of Tatton on Feb. 21st took the chair at the festival dinner held by the Society for Training Teachers of the Deaf and for the Diffusion of the "German" (pure oral) System at the Hotel Cecil, Strand. The society owes its bankers £3250, and a further sum of at least £15,000 is required to carry out a scheme of establishing a school for poor children to form adequate opportunity of practice to the students at the Training College. The objects of the society are to train teachers on the pure oral system and to diffuse the knowledge of the system among parents of deaf children, educational authorities, and the public. The society has trained and certificated 113 teachers of the deaf, and these now compete with the school, so that the society has to fill its school mainly with children whose parents cannot afford fees that are remunerative. In the course of the evening the secretary announced that £5300 had been subscribed. After the usual loyal toasts the Chairman proposed the "Army, Navy, and Reserve Forces." Captain Philpotts, R.N., M.P., responded for the navy, Colonel Grubb for the army, and Captain Holt Stilwell for the reserve forces. Viscount Duncannon, C.B., proposed the "Houses of Parliament," and was loudly cheered when he said that they would shortly have to discuss the future constitution of a great empire in South Africa. Sir John Kennaway, Bart., M.P., in responding to the toast of the "Houses of Parliament," referred to the time when representatives of the British colonies will be seen at Westminster taking their share in the burden and direction of the great British empire. The Chairman proposed the toast of the "Society for Training Teachers of the Deaf and for the Diffusion of the 'German' system," and said that though other systems, such as the sign system and the combined, were much easier than the German system or, as he preferred to call it, the "pure oral system," the difference was very great. Other systems precluded the deaf from becoming like other people, but what was wanted was to make the deaf as far as possible like other people, and this was attained by teaching the pure oral system. This system, however, had not spread widely because of the expense. He understood that there was some contemplation of the foundation of scholarships by the county councils for the training of the deaf. Dr. Symes Thompson, in replying to the toast, said that the pure oral system was based on true physiological principles and must be eventually accepted by the whole world. It had been found necessary in the training school at Ealing to give special teaching in the anatomy and physiology of the organs of speech and hearing. He described how the pupils were first taught to watch the lips of the teachers so as to be able to articulate letters and the process was then carried on into the construction of sentences. Sir John Dorington, Bart., M.P., Mr. Diggle, Mr. Soames, M.P., Sir Frederick Milner, Bart, M.P., Mr. E. St. John Ackers, and Mr. Edward Bond, M.P., also spoke.

UNIVERSITY OF CAMBRIDGE.—The degree of Master of Arts is to be conferred on Mr. Frederick Gowland Hopkins, B.Sc., M.B. Lond., M.R.C.S. Eng., L.R.C.P. Lond., late demonstrator of physiology at Guy's Hospital, and now University lecturer in clinical physiology at Cambridge.—A prize of the value of £20 for the best M.D. thesis presented during the academical year by a graduate who has taken honours in arts has been founded by Mr. R. Horton-Smith, Q.C., in memory of his son. Raymond J. Horton-Smith was a scholar of St. John's College, and highly distinguished himself both at Cambridge and St. Thomas's Hospital. After taking the degrees of M.A. and M.B. he died last autumn at the age of 27 years in the height of his brilliant promise.—The proposed agreement between the University and Addenbrooke's Hospital, which was approved by the Governors of the latter last January, is now offered by the Council of the Senate for adoption by the University. In consideration of an annual contribution of £300 the Governors will elect the Regius Professor of Physic and the Professor of Surgery to the staff, and will offer all reasonable facilities for clinical teaching examinations. An advisory council will also be appointed, on which the town, county, and University will each be represented by five governors. If, as seems probable, the arrangement is adopted certain difficulties of long standing between the two bodies will be happily removed.

LUNACY IN NEW SOUTH WALES.—In the annual report for 1898 Dr. Eric Sinclair, Inspector-General of the Insane in New South Wales, states that the number of insane persons under official cognisance on Dec. 31st, 1898, was 4073, who were distributed as follows:—3901 (including 53 criminals) were in the seven hospitals for insane, 40 were in licensed houses, 123 were absent on leave under the provisions of the Lunacy Act, and nine were in hospitals for the insane in South Australia. The number on Dec. 31st, 1897, was 3957, so that the increase during the year was 116. The total increase for the 20 years beginning with 1879 was 2165, or an average of 108 a year. The estimated population of the colony being 1,346,240, the proportion of insane persons to the population was 1 in 330. The hospitals for the insane were overcrowded, and in view of this circumstance, as well as of the annual increase, Dr. Sinclair recommended the providing of additional accommodation. The statistical tables showed that 620 cases were admitted for the first time during the year, 110 were readmitted, 322 were discharged recovered, 39 were discharged relieved, and 246 died. Of the deaths, 21 were attributed to epilepsy and convulsions, 45 to general paralysis, and 27 to pulmonary consumption.

VITAL STATISTICS OF QUEENSLAND.—According to the annual report for 1898, issued by the Registrar-General of Queensland, the estimated population of the colony, on Dec. 31st, 1898, was 498,523, and was composed of 9989 Chinese, 8589 Pacific Islanders, 3269 Japanese, 358 Javanese, 2242 "other Asiatics," and 474,076 "all other nationalities." From this it will be seen that coloured aliens comprise less than 5 per cent. of the total population, of which the Chinese contribute just 2 per cent. The population of the city of Brisbane within the five-mile radius was 107,840. There were 2972 marriages celebrated in 1898, giving a marriage-rate of 6·03 per 1000. The Queensland marriage rate has been declining steadily since 1863, when it was 14·5 per 1000. The highest marriage-rate in the Australasian colonies during 1898 was in Western Australia, where it was 9·89 per 1000, as compared with 10·65 per 1000 in 1897. The oldest bride was 60 and the youngest was 15 years of age; in former years, however, there have been instances of brides aged 13 years. There were only 13,933 births registered during 1898, which was a smaller number than in any other year of the past decade, and gave a birth-rate of 28·3 per 1000. The relative number of illegitimate births has increased during the last two years; in 1894 the illegitimacy rate was 4·52 per 1000, in 1897 it was 6·02, and in 1898 it was 6·04. The deaths numbered 6243, comprising 3771 males and 2472 females, against 3483 males, 1940 females, and 5423 persons in 1897. The infant mortality, computed from the ratio of the number of deaths under one year to the number of births, was 11·05 for 1898, and the mean for the last decade was 10·61. In the classification of the causes of death the three most fatal diseases were phthisis, pneumonia, and enteritis, the proportion per 10,000 of total deaths assigned to them being respectively 674, 580, and 545. Cancer is found to be increasingly prevalent. Among the less usual causes of death nine fatal cases of caisson disease are recorded.

FOR the twenty-seventh time, at a meeting of the Rural District Council of the Eastern Division of the Corwen Union, Mr. James Pratchett Drinkwater, M.R.C.S. Eng., L.S.A., was elected medical officer of health.

ROYAL COLLEGE OF SURGEONS IN IRELAND: FELLOWSHIP EXAMINATION.—Mr. D. A. Fitzgerald having passed the necessary examination has been admitted a Fellow of the College. The following gentlemen have passed the primary part of the examination: Mr. F. H. McC. C. Crawley, Mr. K. L. G. Gunn, Mr. S. H. Law, Mr. A. Charles, Mr. T. A. Dillon, and Mr. A. H. B. Hartford.

PRESENTATION TO A MEDICAL MAN.—Mr. J. P. Bush of Clifton Park, Clifton, Bristol, who has been appointed chief surgeon of the Princess Christian Hospital, shortly to leave for South Africa, was presented on Feb. 22nd by his friends, previously to going on active service, with a compact case of surgical instruments, the outer case being of silver and appropriately inscribed.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—The Earl of Hardwicke presided at the annual meeting of governors of this hospital on Monday, Feb. 26th. The report stated that during the year 1150 patients had been delivered in the hospital and 1011 at their own homes. The committee were receiving into the hospital as patients the wives of soldiers and sailors on active service with the forces in South Africa. Nearly 50 of these women had been helped. The expenditure had amounted to £4390 7*s.* 9*d.* and the ordinary income to £3378 19*s.* 7*d.* The Prince of Wales's Fund had made a grant of £300 to the hospital and £50 to the convalescent home. The event of the year had been the opening of the new nurses' home by the Duke and Duchess of York in July last. The chairman, in moving the adoption of the report and accounts, made an urgent appeal for contributions towards the £5000 still needed for the work to the hospital and the new nurses' home.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

New Factory Legislation.

THE Home Secretary has made it known that his Bill for the amendment of the Factory Acts which he hopes shortly to introduce will provide new machinery for bringing into force the special rules applicable to dangerous trades, such, for instance, as the earthenware trade, and will also deal with the question of arbitration in connexion with which there has recently been so much difficulty.

The Medical Service of the Royal Navy.

In the statement of the First Lord of the Admiralty explanatory of the Navy Estimates for the year 1900-1901, reference is made to several changes which have been effected or are in contemplation in connexion with the medical service of the navy. It is announced that the numbers of Inspectors-General and Deputy Inspectors-General of Hospitals and Fleets have been increased and the conditions which are required for promotion to these ranks have been modified. The period of the course of instruction at Haslar Hospital for Surgeons on entry has been extended and the award of prizes at the end of each session introduced. The number of medical officers allowed to undergo periods of study at medical schools has been considerably increased and the privilege extended to the senior ranks. An additional professor has been appointed to the instructing staff at Haslar in connexion with the study of diseases of foreign stations. The last paragraph in the statement is perhaps the most important. It announces that medical officers newly entered will in future be required to provide themselves only with a pocket-case of instruments as all ships bearing medical officers and naval and marine barracks will be supplied with surgical instruments at the public cost within the next three years. When Mr. Goschen came to introduce the Navy Estimates in the House of Commons he referred to some of these topics and gave the assurance that the Admiralty are doing what they can to give the medical officers in the navy greater opportunities for studying and informing themselves generally with reference to the progress of medical science, and also to relieve them of burdens which seem to the Admiralty to be unjust.

HOUSE OF COMMONS.

THURSDAY, FEB. 22ND.

Enlistment for the Royal Army Medical Corps.

Sir WALTER FOSTER asked the Under Secretary of State for War whether, seeing that no recruit could be enlisted for the Royal Army Medical Corps if he was over five feet five inches in height, however otherwise eligible he might be, this restriction which prevents enlistment of men otherwise eligible in that branch of the service could be removed.—Mr. WYNDHAM: The maximum standard for the Corps is five feet five inches, but a taller man who might for special reasons be eligible would be taken as "specially enlisted."

Nursing Orderlies in South Africa.

Sir WALTER FOSTER asked the Under Secretary of State for War if the number of nursing orderlies employed in field and general hospitals in South Africa was only one orderly for every seven patients, and if, in the interests of efficiency, it could be increased to one for five patients.—Mr. WYNDHAM: The proportion of orderlies to beds is as stated—one to seven—and the Secretary of State is advised that that is sufficient. In a field hospital the bearer company can supply additional orderlies as soon as an action is over, and as patients are always transferred as soon as possible to the base hospital the beds are rarely all full. In a general hospital many of the cases are always slight and there is a regular staff of nursing sisters.

Netley Hospital.

Captain NORTON asked the Under Secretary of State for War whether it had been brought to his notice that the dining halls at the Royal Victoria Hospital, Netley, were supplied with wooden forms without any back support, which were unsuitable for invalids; and if he would consider the advisability of substituting barrack chairs.—Mr. WYNDHAM: Not long since the opinions of Principal Medical Officers as to the requirements of military hospitals were collected and reported upon by a committee. The change suggested was not among those proposed. The question, will, however, be considered.

Housing of the Working Classes.

Mr. CHAPLIN introduced a Bill to amend Part III. of the Housing of the Working Classes Act, 1890. He explained that the main provision of the measure was to enable local authorities to establish or acquire lodging-houses for the working classes outside their respective districts and that further it simplified procedure under the Act.

FRIDAY, FEB. 23RD.

Plague and Famine in India.

Lord GEORGE HAMILTON, replying to a question on this subject, said: The number of deaths in Bombay city from plague during the week ending Feb. 16th was 583. The number for the corresponding week in the preceding year was 712. As regards the famine the latest estimate of the area affected is now 445,000 square miles and that of the population affected 61,500,000, as against 550,000 square miles and 49,000,000, which were the figures given by me in answer to a question on the 1st of this month. The number of persons in receipt of relief is now about 4,000,000, as against 3,000,000 in the corresponding week of 1897. On the other hand, the relief arrangements are more advanced than they were in 1897, the people are more ready to accept relief, prices are on the whole less high, and the death-rates in the famine districts so far as yet known are lower.

Sanitary Inspectors.

On the motion of Mr. PERCY THORNTON a Bill was introduced and read a first time to amend the law as to the qualifications and tenure of office of sanitary inspectors and to make other relative provisions. Among other things the Bill gives sanitary inspectors an appeal from their employers to the Local Government Board.

The Purity of Water-supplies.

Mr. CORNWALLIS asked the President of the Local Government Board if he intended to introduce a Bill this session to safeguard to consumers the supply of drinking-water by companies and others.—Mr. CHAPLIN replied that he was preparing a Bill upon the subject and had every hope of introducing it.

MONDAY, FEB. 26TH.

Anti-Enteric Vaccine.

Mr. POWELL WILLIAMS, replying to a question addressed to him by Sir JAMES FERGUSSON, said that anti-enteric vaccine is placed on board all transports proceeding to South Africa.

The Anti-Vivisectionists and Mr. R. E. Lloyd.

Mr. WEIR asked the Secretary of State for the Home Department if he would state how often within the last two years the Physiological Laboratory, University College, London, had been visited by the Government inspector; was he aware that Mr. R. E. Lloyd, B.Sc., in the *Journal of Physiology* dated Feb. 2nd, refers to experiments which he made upon three cats and four monkeys, the animals being allowed to linger for two months before death ensued; would he ascertain whether these experiments were made without the use of anæsthetics; and, if they were, would he say when a certificate enabling Mr. Lloyd to dispense with the use of anæsthetics was granted; and, whether any of these experiments were made in the presence of a Government inspector.—Sir MATTHEW WHITE RIDLEY: The Physiological Laboratory at University College was visited by the Government inspector three times in 1898 and once in 1899. During the last quarter of 1899 no experimental work was being carried on there. As regards the last three paragraphs of the question, I think the article in the *Journal of Physiology* has been misunderstood. It does not appear that Mr. Lloyd performed any experiments on living animals at all, and he refers in the paper only, so far as his own work is concerned, to microscopical examination of some brains removed after death from animals upon which experiments had been previously made under anæsthetics by a person holding the proper certificates.

The Care of the Teeth.

Mr. WEIR asked the Vice-President of the Committee of Council on Education, having regard to the fact that a large percentage of the young men who enlist in Her Majesty's army are subsequently rejected on account of bad teeth, would he consider the expediency of arranging for a fully-qualified dentist to attend periodically at each school under the control of the Council for the purpose of inspecting the teeth of all lads over the age of 10 so that they may be encouraged to take such steps as are necessary for the preservation of their teeth.—Sir JOHN GORST: The Committee of Council regard this as a matter for the consideration of local authorities and managers of schools, but the suggestion of the hon. member shall be considered.

TUESDAY, FEB. 27TH.

Civil Surgeons at the War.

Sir WALTER FOSTER asked the Under-Secretary of State for War whether a supplementary list could be placed in the Army List of civil surgeons employed with the army in South Africa; and whether a list of the field hospitals, bearer companies, and general hospitals employed in South Africa, could be placed in the Army List after the medical officers in the Army List, showing the names of officers with each hospital or company.—Mr. WYNDHAM: It is not the practice to insert the names of civilians attached to the army in the Army List. It would be exceedingly inconvenient to do so seeing the temporary character of their engagement. In regard to the proposal in the second paragraph, the changes constantly in progress following the disposition of the troops would render it quite impossible to keep such a statement up to date.

WEDNESDAY, FEB. 28TH.

The Midwives Bill.

The second reading of the Midwives Bill, which stood as the second order at this sitting of the House, was not reached until after the time for the discussion of contested business and consequently, when formal objection was taken, the order was postponed. If the objection be persisted in there will be little or no chance of any progress being made with the Bill this session. Notice of a motion for the rejection of the measure has been given by Mr. T. P. O'Connor.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ALEXANDER, T. A., L.R.C.P., L.R.C.S. Irel., has been re-appointed Medical Officer for the Saham Toney Sanitary District of the Swaffham Union.

ALLAN, C. M., M.A., M.D., M.S. Edin., has been appointed Public Vaccinator for the Longton District of the Stoke-upon-Trent Union, vice Alfred Averill.

DUNLOP, THOMAS, M.B., C.M. Edin., D.P.H. Camb., has been appointed Medical Officer of Health to the Aldershot Urban District Council.

ECCLES, H. D., L.R.C.P. Lond., M.R.C.S., has been appointed Public Vaccinator for the District of Manganui, New Zealand.

HEBBLETHWAITE, ALFRED G., M.R.C.S., L.R.C.P. Lond., has been appointed Public Vaccinator for Keighley and District.

LINES, D. H. E., M.B., Ch.B. Melb., has been appointed Assistant House Surgeon to the Hobart General Hospital, Tasmania, vice C. T. Macgowan.

LININGTON, W. W., F.R.C.S. Eng., has been appointed Honorary Assistant Medical Officer to the Victoria Hospital, Folkestone.

MERCER, W. B., M.B., C.M. Camb., L.R.C.P. Lond., M.R.C.S., D.P.H. Vict., has been appointed Medical Officer of Health for the Rishworth Urban Sanitary District, vice H. G. Hine, resigned.

MILNER, J., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer for the Bradenham Sanitary District of the Swaffham Union.

O'BRIEN, D. P., L.R.C.P. Irel., L.R.C.S., F.R.C.S. Irel., has been appointed Government Medical Officer at Ravenswood, Queensland.

PAUL, L. G., Ph.D., has been appointed Public Analyst for the Borough of Huddersfield.

PORTER, A. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Public Vaccinator for the District of Waihi, New Zealand.

PRIOR, SAMUEL, M.B., C.M. Glasg., has been appointed Medical Officer for the Kirkheaton District of the Huddersfield Union, vice D. Robertson, resigned.

RITCHIE, R. H., M.B., Ch.B. Melb., has been appointed Officer of Health for the Borough of Horsham, Victoria, Australia, vice W. J. Cross.

SCARLETT, ELLA CAMPBELL, M.D. Brux., L.M., L.S.A., has been appointed Assistant Surgeon to the Household of H.M. the Emperor of Korea.

STEEGMANN, EDWARD J., M.B., D.P.H., has been appointed Assistant Lecturer on Hygiene and Public Health at St. Mary's Hospital Medical School, London.

STEELE, H. F., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Oxborough Sanitary District of the Swaffham Union.

STODDART, F. WALLIS, F.I.C., F.C.S., has been appointed Public Analyst to the Ramsgate Urban District Council.

THOMAS, A. W., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer for the Igburgh Sanitary District of the Swaffham Union.

THOMPSON, J., M.B., B.S., has been appointed Resident Medical Officer to the Perth Public Hospital, Western Australia.

THORP, C. G., M.B., Ch.M. Edin., has been appointed Resident Surgeon to the Victorian Eye and Ear Hospital, Melbourne, Victoria, Australia.

VICKERS, CHARLES WILLIAM, M.R.C.S., L.R.C.P. Edin., L.S.A., D.P.H. Lond., has been re-appointed Medical Officer of Health for Paignton (Devonshire).

WAUGH, J., M.D. Dub., has been appointed Medical Officer for the Leighton Buzzard Union.

PRINT IN BINDING

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD COUNTY HOSPITAL, Bedford.—Assistant House Surgeon for six months. Salary £25 for that period, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL, Edmund-street, Birmingham.—House Surgeon, tenable to Oct. 31st, with re-appointment for a further six months, conditionally. Salary at the rate of £40 per annum for the first period, and if re-appointed at the rate of £60 per annum, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND SKIN AND URINARY HOSPITAL.—Clinical Assistant.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £110 per annum, with board and residence.

CARDIFF INFIRMARY.—Resident Medical Officer for three years. Salary £100 per annum, with board, washing, and furnished apartments. Also Assistant House Physician for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary £50 per annum, with board and residence in the hospital.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Honorarium 20 guineas per annum.

CHELTENHAM GENERAL HOSPITAL.—Junior House Surgeon for two years; unmarried. Salary £45 per annum, with board, lodging, and washing.

COTSWOLD SANATORIUM FOR THE OPEN-AIR TREATMENT OF TUBERCULOSIS.—Assistant Medical Officer. Salary commencing at £120 a year and all found.—Apply to Dr. Pruen, Sherborne Lodge, Cheltenham.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £100 a year, with board and residence.

DEVON COUNTY ASYLUM, Exminster. Third Assistant Medical Officer. Salary £100, rising to £125.

DURHAM COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £140, rising by yearly increments to £160, with board, lodging, washing, and attendance. Apply to Medical Superintendent, Winterton, Ferryhill.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon. Board, residence, &c., provided, and an honorarium of £25, conditionally. Also Medical Officer for the Casualty Department for six months. Salary at the rate of £100 per annum. Luncheon is provided at the Hospital.

FARRINGDON GENERAL DISPENSARY, 17, Bartlett's-buildings, Holborn-circus, London.—Resident Medical Officer. Salary £100 per annum, with apartments and attendance.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, London.—Resident Medical Officer. Salary £80 per annum, with full board. Must speak French.

GENERAL HOSPITAL, Nottingham.—Assistant House Physician for twelve months. Salary £100, with board, lodging, and washing in the hospital.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, London.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and washing in the hospital.

HAMLET OF MILE-END OLD TOWN, London.—Assistant Resident Medical Officer at the Workhouse Infirmary, Bancroft-road, Mile-end, E., and also as Assistant Medical Officer for the Workhouse and School, unmarried. Salary £120, with board, lodging, and laundry and an allowance of 2*d.* per day in lieu of beer. Applications to the Clerk to the Guardians, Offices, Bancroft-road, Mile-end, E.

HANTS COUNTY ASYLUM, Fareham.—Third Assistant Medical Officer, unmarried. Salary £125 per annum (increasing to £150 after twelve months' service), with furnished apartments, board, washing, and attendance.

HOLBORN UNION.—Assistant Medical Officer, as a Clinical Assistant, at the Infirmary, Archway-road, London, N., for six months. Salary £80 per annum, and the usual residential allowances.—Apply to the Clerk, Offices, Clerkenwell-road, E.C.

KENT AND CANTERBURY HOSPITAL, Canterbury.—Assistant House Surgeon, unmarried. Salary £50 a year, with board and lodging.

KING'S COLLEGE, London.—Professorship of Materia Medica and Therapeutics.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the institution.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer for six months, unmarried. Salary at the rate of £80 a year, with board and lodging. Apply to the Secretary, Dispensary, Gartside-street, Manchester.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Honorary Surgeon.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary for House Physician and House Surgeon at the rate of £40 a year each. Salary of Assistant House Physician and Assistant House Surgeon at the rate of £20 a year each.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence. No stimulants provided.

ROCHDALE INFIRMARY AND DISPENSARY.—House Surgeon; unmarried. Salary £90 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo Bridge-road, London.—Resident Medical Officer for twelve months. Salary £70 per annum, rations, and laundry.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with furnished apartments, board, and washing.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, Ryde.—Resident House Surgeon. Salary £50 per annum, and a fee of £10 10s. for annual course of lectures to the nurses.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor.—Clinical Assistant. Board, residence, and laundry provided. Also Resident Medical Officer, unmarried. Salary £150 per annum, with board and lodging in the hospital.—Applications to Dr. Parry at the Hospital, Ventnor.

ROYAL SURREY COUNTY HOSPITAL, Guildford.—House Surgeon and Assistant House Surgeon. Salary, House Surgeon, £80 a year, with board, residence, and laundry. Salary, Assistant House Surgeon, £30 a year, with board, residence, and laundry.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL HOSPITAL.—Two Assistant House Surgeons (Senior and Junior), unmarried. Salary £50 each per annum, with board (exclusive of wine and beer), washing, and lodging.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board and residence.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum. Residence, board, and washing provided.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £70 per annum, with board, washing, and residence. Also Junior Assistant House Surgeon. Salary at the rate of £24 per annum, with board, washing, and residence. Appointments tenable for six months.

ST. THOMAS'S HOSPITAL, Westminster-bridge, S.E.—Assistant Physician.

SUNDERLAND INFIRMARY.—House Surgeon. Salary £80, rising £10 annually to £100, with board and residence.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Assistant House Surgeon for six months. Salary at the rate of £30 per annum, with board, lodging, and washing.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Demonstrator and Assistant Lecturer in Anatomy. Salary £120.

UNIVERSITY OF EDINBURGH.—Chair of Medicine: Professor of Medicine.

VICTORIA HOSPITAL FOR CONSUMPTION, Edinburgh.—Resident Physician. Rooms, board, &c., and honorarium £20 per annum. Also Non-resident Clinical Assistant in Charge of Out-patients. Salary £60 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Assistant House Surgeon.—Salary £50 per annum, with board, &c.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and House Surgeon for six months.

WORKSOP DISPENSARY HOSPITAL.—Resident Surgeon, unmarried. Salary £120 per annum, paid monthly, with increase when hospital is opened. Rooms, coal, gas, furniture, and housekeeper provided. Apply to Mr. Charles A. Whall, Worksop.

YORK DISPENSARY.—Resident Medical Officer, to visit the sick poor at their own homes; unmarried. Salary £110 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

DICKSON.—On Feb. 25th, at Scarsdale-villas, Kensington, the wife of T. Hugh Dickson, M.A., M.B., of a daughter.

HARDYMAN.—On Feb. 25th, at Pulteney-street, Bath, the wife of George Hardyman, M.B., F.R.C.S.E., of a son.

KEELE.—On Feb. 20th, at St. Paul's-road, Highbury, the wife of David Keele, M.R.C.S., L.R.C.P., of a son.

ROUTCH.—On Feb. 24th, at Bridge View, 137, Upper Grosvenor-road, Tunbridge Wells, the wife of Frederick Routch, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., of a daughter (prematurely).

MARRIAGES.

COBB—WALKER.—On Feb. 21st, at All Saints', Leamington, Ernest Herbert Cobb, M.R.C.S., L.R.C.P. Lond., elder son of Mr. James F. Cobb of Cornwall-terrace, Regent's Park, to Eleanor, second daughter of the Rev. F. J. Walker, late Rector of Frodesley, Shropshire.

HOLLIS—LASSELL.—On Feb. 27th, at St. John's Wood Presbyterian Church, Harry Hollis, M.D. Cantab., of Wellingborough, to Eleanor, third daughter of the late William Lassell, jun., of Liverpool.

KEKWICK—PRAIN.—On Feb. 22nd, at Blackness House, Dundee, John Kekwick, L.R.C.P., M.R.C.S., L.D.S., son of the late J. W. Kekwick, Carlisle, to Catherine, eldest daughter of John Easton Prain.

PITTS-TUCKER—LE DOUX.—On Feb. 24th, at St. Luke's, Redcliffe-square, Francis Augustus Pitts-Tucker, M.R.C.S., L.R.C.P. Lond., fourth son of Mr. T. J. Pitts-Tucker of Barnstaple, to Antoinette Augusta (Tony), third daughter of G. R. Le Doux of London.

DEATHS.

DUKE.—On Feb. 22nd, at Villa Albert, Cannes, Douglas William Duke, M.R.C.S., aged 51.

SCATTERGOOD.—On Feb. 22nd, at Park-square, Leeds, Thomas Scattergood, M.R.C.S., L.S.A., aged 74 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

MEDICAL CERTIFICATES FOR THE LONDON SCHOOL BOARD.

WE have from time to time commented severely upon the discourteous attitude which the London School Board show, through its officials towards the medical profession. We had thought that owing to the resolution passed on Jan. 21st, 1897 (THE LANCET, Jan. 30th, 1897, p. 331), this discourtesy would cease. But on Feb. 17th a member of the staff of the Royal Westminster Ophthalmic Hospital attended the South-Western Police-court to express his dissatisfaction at the unnecessary demands of the School Board officers. Mr. Burton, the superintendent of the Lambeth Division, had summoned a man named Braby for not sending his child to school and it transpired that the child was under treatment at the hospital and that the surgeon had given a certificate to the effect that the child was unfit to attend school. He had, however, not filled up one of the official school board certificates but the form in use at the hospital. The School Board must remember that certificates are given not because the Board has any right to demand a certificate, for it has none, but purely out of courtesy and with a desire to save the child or its parents from a prosecution. Secondly, the Board has no right to demand to know what is the nature of the illness from which a child is suffering. It is quite sufficient that the child should be returned as unfit to attend school. The nature of an illness, except in certain cases of an infectious kind, is a confidential matter between the medical man and his patient. The magistrate agreed that the surgeon was quite within his rights in using only the hospital form. He did not fine the parent of the boy and directed Mr. Burton to withdraw the summons and to take out another if the boy did not attend school when able to do so. Mr. Sharpe once complained of the School Board having to undergo odium on account of such prosecutions. As long as the Board disregards medical certificates it will be liable to such odium. Instead of harassing the parents of children who are certified to be under medical treatment the Board would better employ its time in clearing the streets of small urchins who hawk newspapers and other things. Possibly this might bring a further rise in the rates, but that is a matter which never causes the Board the least uneasiness. The medical man, in the particular case under consideration, deserves every credit for attending the court, and thanks are also due to the magistrate for his decision in the matter.

WANTED, A HOME.

To the Editors of THE LANCET.

SIRS,—Could some of your readers tell me of a home where a girl, aged 20 years, of the servant class, suffering from melancholia, could be admitted as soon as possible? The father could pay from 6*s.* to 10*s.* a week for her. I am, Sirs, yours faithfully,

Feb. 26th. T. E., L.R.C.P. & S.

AN IMPROVED "ESMOND" CYCLE SADDLE.

THE Esmond Cycle Saddle Company, of Botolph House, Eastcheap, London, E.C., have still further improved their "Esmond" saddle and the tests to which we have put it are highly satisfactory in their results. In its old form the saddle had a backward and forward swing while it also partially rotated laterally. These movements are still maintained but in addition the back of the saddle is now supported on two springs. For travelling over rough ground and for climbing hills the saddle is one of the best we have tried while in all cases the usual discomforts are reduced to a minimum. Not the least of the advantages of this saddle is the fact that if properly adjusted there cannot possibly be any "bumping" or slipping on the seat.

THE ASSUMPTION OF MEDICAL TITLES.

ON Feb. 25th, Harry Edwin Collis of Cambridge-street, Hyde Park, was summoned at the instance of the General Medical Council for wilfully and falsely pretending to be a Doctor of Medicine and for unlawfully using the titles "Doctor" and "M.D." In November, 1899, the General Medical Council received from Keble College, Oxford, a pamphlet published from Cambridge-street, Hyde Park. In consequence of this the defendant's premises were visited and on the door, the railings, and the letter-box were found brass plates bearing the name "Dr. Washington Evans." As this gentleman had been struck off the Register in 1885 the solicitors to the General Medical Council caused a letter to be written to "Dr. Washington Evans, Cambridge-street." A letter was received in reply signed in the name of "Washington Evans" and mentioning terms for treatment. This letter the defendant admitted was written by himself. The brass plates were removed after the summons was issued. Mr. Freke Palmer, for the defence, said that Dr. Evans had died in November, 1899, and the widow had asked the defendant to carry on the business for her. He did so entirely for her benefit. The business had now been stopped. Mr. Curtis Bennett is reported as saying that the worst feature of the case was that defendant had no qualifications for carrying on the business, and but for these proceedings he would probably still be conducting it. Defendant was fined 40*s.* and five guineas costs. Mr. Collis may have been actuated by motives of pure humanity and anxiety to assist a widow, but this does not excuse fraud. Personation of a dead man is a serious offence in any case, and when the personation necessarily entails an assumption of qualifications and knowledge which the personator does not possess the offence is doubly grave.

"THE CLERGYMAN AND THE MEDICAL MAN."

WITH reference to the letter upon this subject which appeared in our columns on Feb. 17th we see that our contemporary, the *Chemist and Druggist*, of Feb. 17th, prints the "Sure and Certain Cure for Influenza" as it appears in a Glasgow paper. It there reads as follows: "Pure Phenol Calvert's No. 1, prepared for internal use. Dose: two tablespoonfuls in a wineglassful of water three times in 24 hours. ....." An ounce of pure carbolic acid in an ounce of water would probably be fatal.

"MEDICAL ATTENDANCE IN BOURNEMOUTH."

To the Editors of THE LANCET.

SIRS,—Having read "One of the Ailing's" complaint and your reply in THE LANCET of Feb. 24th I still think that reform is desirable in this matter. As a resident in London it has often forced itself unpleasantly upon me that if after, say, 1 P.M. I required medical advice it was useless to visit a medical man on that day until the evening. As I understand the matter they are to be consulted up till midday; after this they are either at hospitals or visiting their patients. As to hospitals, I suppose it would be difficult to vary the time of attendance, but surely some of the profession might visit patients in the morning and thus be available for consultations in the afternoon. I am, Sirs, yours faithfully,

Feb. 26th, 1900. A PATIENT.

WHO IS TO PAY?

To the Editors of THE LANCET.

SIRS,—I should like the benefit of your opinion in the following case. I am sent for to attend a single girl of 18 years of age at her confinement. I deliver with forceps and ultimately, at the girl's request, send in my bill of two guineas to the father who defies me and will not pay. The girl, I may say, left her home and went to stay with some people in the next street and was delivered there. She has remained with them ever since and has left for another town with them. The girl's father is, I am informed, in possession of a sum which was paid him by the father of the child. I am told that I cannot successfully sue the girl's father and as the girl has nothing it would be useless to sue her. The father says his house was open to her and that he did not want her to go anywhere else. Can you advise me what to do? I am, Sirs, yours faithfully,

Feb. 24th, 1900. DISPUTED ACCOUNT.

*** We can only recommend our correspondent to employ a solicitor and follow his advice.—ED. L.

A CASE OF INTRACTABLE ULCER.

To the Editors of THE LANCET.

SIRS,—I wish to gain the assistance of some of your readers in the following case. The patient is very debilitated and is suffering from an ulcer of about the size of a shilling situated on the inner side of the tibia. The ulcer is the result of an injury and is of some three months' standing. The patient has had eczema of the same leg which was very intractable. Iodoform ointment and dressings have been tried, but with little benefit. It occurred to me to try the "Oxygen Treatment," but I should like to have the opinion of others before doing so and should be grateful for full particulars as to mode of application.

I am, Sirs, yours faithfully,

TIBIA.

*** The address of the Oxygen Home is 2, Fitzroy-square, W., and full information will be given on application to the secretary.—ED. L.

"DESCRIBED AS A DOCTOR."

THE *Morning Herald* of Thursday, Feb. 15th, contained the following paragraph:—

PERJURY BY A DOCTOR.

Lionel George Peyton Holmes, described as a doctor, pleaded guilty to an indictment charging him with having committed perjury in an action tried in the Mayor's Court, Guildhall.—It was stated that Holmes gave evidence in an action tried recently in the Mayor's Court, when he swore that he was a Licentiate of the Society of Apothecaries and qualified to give medical advice. He gave his name as George Holmes, in which name, it appeared, that some time ago a certificate was issued, but, it was alleged, not to the accused.—Mr. Overend, on behalf of prisoner, stated that he had acted as a dispenser to medical men. His present position meant a very serious thing to his future.—The Common Sergeant passed a sentence of three months' imprisonment, as an offender in the Second Division.

It is singularly unfair to head such a paragraph "Perjury by a

Doctor." The practice of calling any person who has dabbled in drugs or castrated cats a "doctor" is on a par with that which obtains of describing every rowdy street-walker as an "actress." Holmes's counsel stated his client's position, and the prisoner should have been described accordingly.

DIFFICULTIES UNDER THE VACCINATION ACT.

To the Editors of THE LANCET.

SIRS,—Can you advise me if anything can be done under the following circumstances? I find that the percentage of vaccinations I get to do are not what they should be, due to this fact—a local medical practitioner arranges to vaccinate any child in one place only for the sum of 1s.; he thus brings the public vaccinators into disrepute because they must do four places, and also he, I think, to a large extent invalidates the benefit of the Act. I may add that this has been going on for years, but has greatly increased since the New Vaccination Act came into force. I know that other public vaccinators around complain of the same thing. Can it not be stopped?

I am, Sirs, yours faithfully,

Feb. 17th, 1900. A. P. V.

*** According to the instructions of the Local Government Board dated Jan. 7th, 1897, a public vaccinator must "in all ordinary cases of primary vaccination, make such insertions of lymph as will produce at least four separate good-sized vesicles, not less than half an inch from one another," and if these instructions are not carried out the public vaccinator would incur the risk of losing the Government grant, while if such instructions were habitually disregarded there might be question as to whether the vaccinator would be allowed to continue in office. We fear there is at present no remedy for the obviously unfair state of things referred to by our correspondent, and, moreover, the practice is likely to lead to the creation of a large and very imperfectly protected number of children. The moral responsibility of these practices rests with the medical men who condescend to employ them. Until "vaccination" is defined by law there is, we fear, no legal remedy. We shall, however, continue to condemn in our columns such apology for vaccination.—ED. L.

M P S.—The matter is not referred to in the Medical Acts. There is a regulation of the General Medical Council to the effect that six months of the fifth year of study may be spent with a registered practitioner. The General Medical Council in November, 1897, agreed that notices relative to the employment of unqualified persons as assistants or otherwise should be inserted as an advertisement in the medical journals. (See THE LANCET, Dec. 11th, 1897, p. 93 of the advertisement columns.) In this notice the Council pointed out that after a certain lapse of time any practitioner employing an unqualified assistant or "covering" should be deemed guilty of "infamous conduct in a professional respect," and added that the foregoing notices "do not apply so as to restrict the proper training and instruction of *bonâ-fide* medical students and pupils . . . under the immediate personal supervision of registered medical practitioners." The Council further decided that they "do not think it necessary or expedient ..... to lay down regulations intended to meet all the particular cases which may arise. As in all other instances, the Council must deal with each case on its merits."

Hygiene.—Our correspondent is advised to consult, in addition to the books he mentions, Surgeon-Major A. M. Davies's "Handbook of Hygiene." London: Griffin and Co., price 12s. 6d. The articles on Climatology and on Plague and other Infectious Diseases in Allbutt's System of Medicine will also be found useful. The most recently published instructions upon plague were contained in a circular issued by the Local Government Board for Scotland dated Jan. 15th, 1900, upon which we commented in THE LANCET of Jan. 20th, p. 179.

N. Y. Z.—We cannot attempt to guess what view the General Medical Council may take when both sides of the question are placed before them.

R. J.—We have not the information. The reading-room of the British Museum is not difficult of access.

Rural.—There is an excellent historical sketch in the "National Dictionary of Biography."

Mr. A. Cooper Penn.—Our correspondent is thanked for his letter.

T. T.—We have already made a reference to the case.

Student should consult his medical man.

F.R.C.P. Ed.—Yes.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Norfolk Standard, Blackburn Telegraph, Bradford Observer, Sheffield Independent, Bristol Times and Mirror, Manchester Evening Chronicle, Manchester Courier, Brighton Gazette, Daily Gleaner (Kingston, Jamaica), Pioneer Mail, Times of India, Scotsman Citizen, Builder, Architect, Sanitary Record, South Wales Daily News, Public Health Engineer, Birmingham Daily Post, Kentish Observer, Lincoln Echo, Liverpool Daily Post, Leeds Mercury, Hertfordshire Mercury, Bristol Mercury, Local Government Chronicle, Yorkshire Post, Reading Mercury, City Press, Teesdale Mercury, Scientific American, Dewsbury Reporter, Ripley Advertiser, Health, New Zealand Herald, Star, British Dental Journal, Morning Advertiser, Portsmouth Times, Surrey Advertiser, Local Government Journal, Mining Journal, Burnley Gazette, Essex County Standard, Australasian Medical Gazette, Weekly Free Press and Aberdeen Herald, Southwark Record, Isle of Wight Herald, Wakefield Herald, Lichfield Mercury, Gloucestershire Echo, Rangoon Gazette, Oban Times, Cork County Eagle, Birmingham Daily Post, &c., &c.*

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 1st, 1900.

Date.	Barometer reduced to Sea Level and 32° F	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade	Min. Temp	Wet Bulb	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 23	29·53	S.W.	0·10	72	57	45	50	51	Raining
" 24	29·69	S.W.	0·03	78	58	51	51	53	Overcast
" 25	29·77	S.W.	0·10	67	55	50	52	53	Cloudy
" 26	29·59	S.E.	0·01	67	57	46	46	47	Raining
" 27	29·42	E.	0·37	56	53	47	49	50	Raining
" 28	29·81	N.E.	0·20	50	50	44	44	45	Raining
Mar. 1	30·13	N.E.	0·07	72	39	38	37	39	Cloudy

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. .

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (10th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (5th).—MEDICAL SOCIETY OF LONDON.—9 P.M. Sir W. M. Banks: Practical Observations on Cancer of the Breast. (Lettsomian Lecture).

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square, W.C.).—7 P.M. Council Meeting. 8 P.M. Communications:—Mr. B. Neale: (1) A Case of Multiple Necrosis of the Mandible of Dental Origin, with Notes on the Surgical Aspect of the Case by Mr. F. Marsh; (2) Prophylactic Lower Dentures. Cases and Specimens will be shown by Mr. H. Baldwin, Mr. H. R. F. Brooks, and Mr. M. Henry.

OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-street, Cavendish-square, W.).—4.30 P.M. Cases and Specimens will be shown by Prof. U. Pritchard, Mr. R. Lake, Dr. H. Tilley, Mr. A. Cheatle, Mr. W. C. Bull, and Dr. J. Horne. Adjourned Discussion on the Cases shown at the last meeting by Dr. D. Grant, Mr. A. Cheatle, and Mr. E. Waggett. Discussion of Cases and Specimens shown at the Meeting.

SOCIETY OF ARTS.—8 P.M. Mr. E. S. Shepherd: Photography of Colour.

TUESDAY (6th).—PATHOLOGICAL SOCIETY OF LONDON (Laboratories of the Royal Colleges of Physician and Surgeons, Victoria Embankment, W.C.).—8.30 P.M. Papers and Demonstrations:—Dr. Brodie and Dr. Dixon: The Influence of Drugs on the Pulmonary Circulation and the Bronchial Muscles. The Production of Asthma.—Dr. Brodie: The Action of Diphtheria Toxin on the Spleen.—Dr. Pavy: The Production of Glycosuria by Exalted Respiration.—Dr. Pavy, Dr. Brodie, and Mr. Sian: Phlorizin Glycosuria in an Artificially Perfused Kidney.—Dr. Bain: Observations on Metabolism in Rheumatoid Arthritis.—Dr. Grube: The Pathology of Diabetic Coma.—Dr. Cadman: The Arrangement of Fibres in the Rootlets of the Ninth, Tenth, and Eleventh Cranial Nerves.

WEDNESDAY (7th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Mr. G. W. B. Lawrence (introduced by Dr. Blacker) Dr. Macnaughton-Jones, and others. Demonstration:—Mr. A. Keith (introduced by Dr. Lewers): Dropsical Parasitic Twin Foetus of Peculiar Form. Paper:—Dr. J. Phillips: A Case of Extra-uterine Gestation in which Foetal Death occurred at Term after Spurious Labour and Abdominal Section was performed from four to five months later.

THURSDAY (8th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8 P.M. Cases and Card Specimens. 8.30 P.M. Papers:—Mr. W. M. Beaumont: Family Tendency to Ophthalmoplegia Externa.—Mr. A. L. Silcock: Meningitis followed by Panophthalmitis.—Mr. J. H. Fisher: Pigmented Tumour of the Eyeball, Death from Multiple Pigmented Carcinomata nearly 14 years after Excision of the Eye.—Mr. H. W. Dodd: Green Vision.—Mr. W. H. Jessop: Embolism of both Central Retinal Arteries.

MEDICAL SOCIETY OF LONDON (Whitehall Rooms, Hotel Métropole).—7 P.M. Anniversary Dinner.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—Specimens will be shown by Mr. S. Bishop, Dr. G. Elder, and Dr. Macnaughton-Jones. Papers:—Dr. R. Worrall: Pregnancy complicated with Myomata and Ovarian Cyst.—Dr. M. Laurie: The Indications for the Removal of the Uterine Appendages.

FRIDAY (9th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. Caton: The Prevention of Valvular Disease in Acute Rheumatism.—Dr. Hale White and Mr. Fripp: A Case in which the attempt was made to Remove a Dermoid Tumour which growing in the Spinal Canal pressed upon the Spinal Cord.—Dr. F. E. Batten and Dr. Prickett: A Case of Acute Encephalitis in a Child following Influenza.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-st., Cavendish-square, W.).—4.30 P.M. Discussion on Conditions of the Throat and Larynx Simulating and Predisposing to Tuberculosis (opened by Mr. Lennox Browne).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (5th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. A. W. M. Robson: The Surgery of the Stomach.

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Mr. Waggett: Accessory Sinus Suppuration. (Post Graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. Galloway: Consultation. (Skin.)

ROYAL INSTITUTION OF GREAT BRITAIN.—5 P.M. General Monthly Meeting.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Ball: Methods of Treating Throat, Nose, and Ear Affections.

TUESDAY (6th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Sir W. H. Broadbent, Bart.: Consultation. (Medical.) 6 P.M. Dr. S. Taylor: Class. Applied Anatomy and Physical Diagnosis. Demonstration I.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.).—3.30 P.M. Mr. Gunn: Optic Neuritis.

ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Prof. E. Ray Lankester: The Structure and Classification of Fishes.

WEDNESDAY (7th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. A. W. M. Robson: The Surgery of the Stomach.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—4.30 P.M. Dr. Eddowes: Seborrhœic Eczema and Rosacea. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Mr. J. Berry: Clinical Demonstration.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: Cases of Cardiac Hypertrophy.

THURSDAY (8th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. J. Waldo: Summer Diarrhœa with special relation to Causation and Prevention. (Milroy Lecture.)

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street, W.).—5 P.M. Clinical Demonstration:—Mr. H. W. Dodd: Cases of Visual Disorder in relation to Diseases of the Nervous System.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. H. S. Collier: Demonstration of Selected Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. M. Murray: Demonstration of Medical Cases. (Post-graduate Course.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

LONDON SKIN HOSPITAL (40, Fitzroy-square, W.).—4 P.M. Mr. J. Startin: Baldness and its Causes.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. Ball: Methods of Treating Throat, Nose, and Ear Affections.

FRIDAY (9th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Prof. A. W. M. Robson: The Surgery of the Stomach.

ROYAL INSTITUTION OF GREAT BRITAIN.—9 P.M. Prof. F. Clowes: Bacteria and Sewage.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Eye, Ear, Nose and Throat.)

SATURDAY (10th).—ROYAL INSTITUTION OF GREAT BRITAIN.—3 P.M. Right Hon. Lord Rayleigh: Polarised Light.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

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MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1899, which was completed with the issue of Dec. 30th, and the Title-page to the Volume were given in THE LANCET of Jan. 6th.

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